Heterocerata

Bothridae

Pseudorhaminus megalops n. sp.

Amaglossum macrolepinum n. sp.

Bothus Rafinesque

Bothus brunneus n. sp.

" confertus " "

" obliquireticulatus n. sp.

" stellatus n. sp.

Subgenus Bothus Raf.

"

Crossobothus new subgenus.

Bothus " variegatus n. sp.

Laeops Günther

Leptolaeops n. subgenus

Laeops elarius n. sp.

" cyclus n. sp.

" gracilis n. sp.

1953

Family Bothidae

Body sinistral. Eyes moderate. Maxillary usually over 1/3 of head. Mouth symmetrical, large, usually terminal and lower jaw prominent. No supplemental maxillary. Dentition nearly equally developed on both sides of jaws. No palatine teeth. Nostril of blind side near edge of head. Preopercle edge free. Nerve of right side always dorsal. Olfactory laminae arranged transversely to, or radiating from, a central rachis. Lower pharyngeals narrow, each with one or more rows or a narrow band of small sharp teeth. Vertebrae 31 to 45, of

aa. Body more rhomboid; scales regularly rounded and arranged in longitudinal rows; snout more or less pointed; dorsal spines 10 to 14, about 1½ times longer than soft rays; anal spines 3; soft dorsal and anal obtusely rounded.

b. Chaetodon. Horizontal or but little inclined rows of scales below lateral line.

t. Black or dark ocular band present, at least complete on cheek.

u. Body without 8 narrow black transverse bands.

v. No parallel dark band posterior to ocular band and extending from upper end of gill opening to pectoral base and belly.

w. A black predorsal spot; black ocular band below eye on cheek only; black band from base of soft dorsal to anal base; soft dorsal and anal edged black. Flavirostris

ww. No black predorsal spot; ocular band complete.

which 24 to 33 caudal; parapophyses united or separated below. No accessory lateral line. Dorsal fin begins on head, at least above eye. All fin rays articulated. Anal spine usually weak or obsolete, sometimes pelvic spine developed. Caudal rounded or subtruncate. Paired fins usually well developed. Ventrals unlike in form and position, left or colored fin extended on ridge of abdomen with wide set rays.

Tropical or subtropical species.

Holacanthus lepidolepis Bleeker.

Holacanthus lepidolepis Bleeker, Nat. Tijds. Ned. Indië, deel 4, 1853, p. 468. Batavia, Java. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 47 (copied).

Acanthochaeto-don lepidolepis Bleeker, Atlas Ichth. Ind. Neerl., vol. 9, 1877, p. 69, plate (10) 372, fig. 1 (Batavia),

Holacanthus ignatius Playfair, Proc. Zool. Soc. London, 1867, p. 852, plate 41. Seychelles.

Holacanthus poecilus Peters, Monatsber. Akad. Wiss. Berlin, 1868, p. 454. Zanzibar.

1957

Analysis of Genera

a.' Paralichthinae. Ventral fins alike; eyes separated by ridge; mouth moderate or large; teeth uniserial.

b.' Maxillary moderate or large, more than 1/3 of head; lateral line on both sides. Pseudorhombus.

b.² Maxillary small, less than 1/3 of head; lateral line absent from blind side. Taeniopsetta.

a.² Bothinae. Left ventral fin median, base much longer than right one.

c.' Dentition more or less developed on both sides of jaws.

d.' Mouth moderate or small; maxillary 1/2 or less of head; lower jaw not prominent.

e.' Eyes separated by bony ridge or concave space of moderate width; interorbital alike in both sexes; gill opening extends upwards to or nearly to beginning of lateral line; usually no rostral spines, when developed present in both sexes.

f.' No rostral spines; front dorsal rays sometimes moderately extended in males.
g.' Scales of eyed side rather weakly ctenoid or ciliated.
Arnoglossus.
g.² Scales of colored side strongly ciliated.
Crossolepis.
f.² Rostral spines present; front dorsal rays prolonged in both sexes, filamentous in males.
Lophonectes.
e.² Interorbital concave, usually very wide in males; gill opening ends short space above pectoral fin, membrane connects opercle with shoulder, scaleless; rostral and ocular spines developed only in males; scales small.
h.' Scales small, 75 to 90 or more.
i.' Scales slightly or moderately ctenoid on eyed side.
Bothus.
i.² Scales strongly ciliated, denticles long and slender on eyed side.
Crossobothus.

1959

h.[2] Scales large, 38 to 60, strongly ciliated on eyed side. Crossorhombus.

d.[2] Mouth very large; maxillary more than 1/2 of head; body elongate; lower jaw prominent. Chascanopsetta.

c.[2] Dentition more entirely on blind side; mouth small; maxillary nearly 4 to 5 in head. Laeops.

1960

Genus Pseudorhombus Bleeker

Pseudorhombus Bleeker, Versl. Med. Kon. Akad. Wet. Amsterdam, vol. 13, p. 426, 1862. (Type Rhombus polyspilos Bleeker, monotypic.)

Tetratorhombus Macleay, Proc. Linn. Soc. New South Wales, vol. 6, p. 426, 1881. (Type Tetratorhombus excisiceps Macleay, monotypic.)

Rhombiscus Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 23, p. 379, 1900. (Type Rhombus cinnamoneus Schlegel, orthotypic.)

1961

Eyes normally on left side, close together, separated by bony ridge. Mouth moderate or large, extends below eye. Teeth in jaws rather strong, sometimes canine like, uniserial. No teeth on palate. Gill membranes united, free from isthmus. Gill rakers slender or very short dentated knobs. Scales moderate or small, ctenoid or partly cycloid on left side, usually cycloid on right side. Fins scaly. Lateral line present on both sides, with strong arch anteriorly and accessory branch running to dorsal base. Dorsal begins on snout, none of rays enlarged.

cadmium beyond gray. dorsal body color, tips of spines and submarginal bar of soft fin cadmium, soft edge very narrowly dusky. Terminal half of caudal dusky hyaline, under this short cadmium bar. Anal like body, with cadmium margin like dorsal. Pectoral dusky hyaline, cadmium at base. Ventral sulphur basally, tips cadmiums.

892. West coast of Palawan Island. November 18, 1909. Length 140 mm.

A 1374. Basa Island reef, Celebes. December 17, 1909. Length 167 mm.

A 945 and A 946. Dodepo and Pasajigo Islands, Celebes. November 16, 1909. Length 150 to 160 mm.

A 1043. North of Maliboyan Point, Celebes. November 21, 1909. Length 155 mm.

1962

Ventral bases short, fins
symmetrical.
Indo-Pacific.

passes below to subopercle edge and diffusely on breast; limited each side by lavender gray border slightly less than half width of dark band. On humeral region 2 lavender lines about half pupil width passing obliquely downward; posterior with only slight forward curve ends near middle of soft anal base; front one passes down before hind opercle edge and pectoral base and bends back to end near front of anal base. Indistinct umber bar crosses front of caudal peduncle, merging into cadmium orange bar at vertical base of dorsal and an indistinct bar similarly located on anal bordered indefinitely on peduncle region by gray. Short black stripe between eyes across snout. Upper lip cadmium. Opercular edge

1963

Pseudorhombus annamensis Chabanaud

Pseudorhombus annamensis Chabanaud,

— Chevey, Inst. Océan. Indo Chine, 19e note, p. 27, Aug. 25, 1932 (Annam).

1964

Pseudorhombus annulatus Norman

Pseudorhombus annulatus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 12, pl. 2, April 1927 (type locality: Muscat, Gulf of Oman).

Rhamboidichthys panthorinus (not Rüppell) Regan, Journ. Bombay Nat. Hist. Soc., vol. 16, p. 332, 1905 (Muscat).

1965

Pseudorhombus anomalus Ogilby

Pseudorhombus anomalus Ogilby, Mem. Queensland Mus., vol. 1, p. 48, Nov. 27, 1912 (type locality: Moreton Bay). — Mc Culloch, Austral. Mus. Mem., No. 5, pt. 2, p. 279, Sep. 10, 1929 (reference).

1966

Pseudorhambus argus Weber

Pseudorhambus argus Weber, Siboga Exped., vol. 57, p. 425, pl. 11, fig. 6, May 1913 (type locality: Jeden Island, east Aru Islands). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 113, fig. 27, 1929 (type). — McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 278, Sep. 10, 1929 (reference).

Depth 2 1/8; head 3 1/4, width 4. Snout to lower orbit 4 4/5 in head from snout tip; lower orbit 3 3/5, greater than snout, opposite upper orbit; maxillary reaches 2/3 in lower orbit, expansion 2, length 2 1/5 in head from snout tip; interorbital narrow, trenchant keel. Gill rakers 2+10, low tubercles, 2/5 of gill filaments, which 2 1/2 in lower orbit.

Scales 74 in lateral line to caudal base and 4 more on latter; 29 above, 31 below. Vertical fins all with fine scales, a single row along each

1967

dorsal and anal rays. Snout and front of mandible naked. Maxillary largely scaly terminally. Scales with 7 to 11 basal radiating striae; 9 or 10 divergent, rather irregular, strong, apical denticles; circuli fine, continuous. Lateral line on both sides of body, arch 2 3/4 in, straight portion to caudal base. Right scales cycloid.

D. 12, fin height 2 in total head length; A. 15, fin height 2 2/5, ~~1~~ increased by small concealed spine; caudal 1 1/4, obtusely angular behind; least depth of caudal peduncle 3 1/4; pectoral 1 2/3; ventral 2 2/5.

Left side fawn color generally. Four large prominent dark brown to neutral black rounded blotches, each with pair of limited whitish rings made up of small white spots or dots, also few other white

Tetragmoptrus (Chaetodontops) fasciatus
. Bleeker, Atlas Ichth. Ind. Neerl., vol.
7, 1877, p. 41 (part).
Chaetodon flavus Schneider, Syst. Ichth.
Bloch, 1801, p. 225. Arabia. — Rüppell,
Atlas Reise nördl. Afr. Fische, 1828, p. 40,
plate 9, fig. 1 (Red Sea).

differs from Chaetodon lunula in the
dark basal dorsal band not crossing
the caudal peduncle.

1968

dots scattered around within
radius of dark blotch. ~~On lateral~~
~~line posteriorly 2 similar, though~~
~~less defined dark blotches.~~
Left side otherwise with many
dark rounded blotches, larger
ones scattered among smaller ones,
and each of former with more
or less paler triangular blotch,
Of larger of these blotches 2 on
lateral line, well separated and
posterior have few small white
dots in addition. On head all
spots smaller than on body. In
all intermediate areas of head
and body many very small
scattered dark dots or specks,
some formed as minute or small
arcs, curves, etc. ~~On~~ On its dark
gray. Vertical fins with row

Chaetodon fasciatus Forskål.

Chaetodon fasciatus Forskål, descript. Animal., 1775, pp. XII, 59. Djedda, Red Sea. — Gmelin, Syst. Nat. Linn., 1789, p. 1266 (Arabia). — Schneider, Syst. Ichth. Bloch, 1801, p. 217 (Red Sea). — Lacépède, Hist. Nat. Poiss., vol. 4, 1802, pp. 456, 480 (Arabia). — Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 47 (copied). — Rüppell, Neue Wirbelth. Fische, 1839, p. 28. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 24 (Red Sea; China). — Kaup, Arch. Naturges., band 26, abth. 1, 1860, p. 150 (no locality). — Klunzinger, Verh. zool. bot. Ges. Wien, band 20, 1870, p. 778 (Kosseir, Red Sea). — Károli, Termesz. Füzetek, Budapest, vol. 1, 1881, p. 15 (Canton). — Klunzinger, Fische Roth. Meer., 1884, p. 56. — Elera, Cat. Fauna Filip., vol. 1, 1895, p. 486 (Luzon; Manila; Malabar). — Ahl, Arch. Naturges., band 89, abth. A, heft 5, 1923, p. 117 (Red Sea).

of dark brown subbasal circles on dorsal and anal, caudal with smaller circles and terminally all fins with scattered small dark brown specks or dots. Pectoral pale, with obscure dull brown dots on rays. Ventral like anal. Right side whitish, also its paired fins, vertical fins with brownish rings and dots more or less obscured.

Heretofore known only from the Aru Islands I have to add a second specimen from Buton Strait. A beautiful species, easily known by its ornamental color pattern, the large dark blotches of the colored side each with head like dots forming 2 linked circles.

Chaetodon semilarvatus Cuvier.

Chaetodon semilarvatus (Ehrenberg) Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 39. Red Sea. — Klunzinger, Verh. zool. bot. Ges. Wien, bnd 20, 1870, p. 729 (Red Sea). — Ahl. Arch. Naturges., bnd 87, abth. A, hft 5, 1923, p. 166 (types; Kossair).

Chaetodon (Anisochaetodon) semilarvatus Klunzinger, Fisch. Roth. Meer., 1881, p. 57, plate 11, fig. 1.

All posterior half of head black, head above and anteriorly yellow. No dark posterior band. Caudal with submarginal black band.

1970

D. 5641. Kalano Point (W.), N. 61° W., 3.4 miles (lat. 4°29'24" S., long. 122°52'30" E.), Buton Strait. In 39 fathoms. December 14, 1909. Length 90 mm.

. . 8212. Refugio Island, Pasacao, Luzon. March 9, 1909. Length 432 mm. Generally rufous to tawney, fading nearly chocolate to olive yellow; side with numerous slate blue or indigo stripes, following scale rows more or less undulating and anastomosing. Breast tawny, without stripes, chest breaking into spots above vent and behind gill opening. Some vertical stripes immediately behind gill opening. On side of head slaty becomes ground color with tawny appearing as very thickly scattered rounded or irregular spots. Immediately above forehead and front of head below without spots. Broad purplish stripe across maxillary, upper lip somewhat

1971

Pseudorhombus arsius (Buchanan-Hamilton

Pleuronectes arsius Buchanan-Hamilton, Fishes of Ganges, pp. 128, 373, 1822 (type locality: estuary below Calcutta). — Hora, Mem. Indian Mus., vol. 9, no. 4, pl. 17, figs. 1-2, 1929.

Rhombus arsius Bleeker, Verhand. Batavia. Genoot. (Bengal Ind.), vol. 25, p. 76, 1853 (reference).

Pseudorhombus arsius Günther, Cat. Fishes Brit. Mus., vol. 4, p. 426, 1862 (colored drawing). — Day, Fishes of India, pt. 3, p. 423, pl. 91, fig. 5, 1877.

— Jordan and Seale, Proc. U. S. Nat. Mus., vol. 29, p. 529, 1905 (Hong Kong); Bull. Bur. Fisher., vol. 26, p. 45, 1906 (1907) (Cavite). — Jenkins, Mem. Indian Mus., vol. 3, p. 24, 1910(

— Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 439, 1912 (Shimizu, Kagoshima). —

Jordan, Tanaka, Snyder, Journ. College Sci., vol. 33, p. 315, 1913 (reference). — Seale, Philippine Journ. Sci., vol. 4, p. 1, 1914.

— Hora, Mem. Indian Mus., vol. 5, pt. 5, p. 758, 1923 (Chilka Lake); Mem. Asiatic Soc. Bengal, vol. 6, pt. 9, p. 476, 1924 (Talé Wap, Peninsula Siam). — Norman, Biol. Res. Endeavour, vol. 5, p. 231, 1926 (

Rec. Indian Mus., vol. 29, pt. 1, p. 13, April 1927 (Karachi, South Canara, Madras, Ennore, Puri, Balasore Bay, Orissa, Chilka Lake, Calcutta, Akyab, Andamans, Morrison Bay; Muscat; Gulf of Oman; Bengal; South Canara). — Reeves, Journ. Pan Pac. Res. Inst., vol. 2, no. 3, p. 14, July-Sep. 1927 (Swatow). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 105, 1929 (Sumatra, Java, Borneo, Amboin, Aru, New Guinea). — Mc Culloch, Austral. Mus. Mem., vol. 5, pt.

1973

2, p. 279, Sep. 10, 1929 (compiled). —
Chu, Biol. Bull. St. Johns Univ. Shanghai,
No. 1, p. 91, Jan. 1931 (reference). —
Chevey, Inst. océan. Indo Chine, 19e
Note, p. 27, Aug. 25, 1932 (Annam).

0974

?Pleuronectes nauphala Buchanan-Hamilton, Fishes of Ganges, pp. 126, 373, 1822 (type locality: Gangetic estuaries).

?Rhombus maculosus Cuvier,

Pseudorhombus maculosus Bleeker, Nederl. Tidjschr. Dierk., vol. 4, p. 130, 1873 (1874) (name). — Chu, Bull. St. John's Univ. Shanghai, no. 1, p. 90, Jan. 1931 (reference).

Platessa russellii Gray, Illustrat. Ind. Zool. Hardwicke, vol. 2, pl. 94, fig. 2, 1830–35 (1834) (type locality: India).

Pseudorhombus russellii Günther, Cat. Fishes Brit. Mus., vol. 4, p. 424, 1862 (Natal, China, Borneo, Ceram, Bengal, East Indies, Pinang, Port Essington). — Bleeker, Atlas Ichth. Ind. Neerl., vol. 6, p. 6, pl. (2)[233], fig. 2, 1866 (Banka, Borneo, Celebes, Amboina, Ceram, Timor, Java).

1975

Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. , 1880 (

Klunzinger, Sitzs. Ber. Akad. Wiss. Wien, math.-nat. Kl., vol. 80 pt. 1, p. 406, 1879 (1880) (Endeavour River, Queensland).

— Macleay, Proc. Linn. Soc. New South Wales, vol. 6, p. 124, 1881 (Port Jackson, Port Essington).

— Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, p. 282, 1889 (Bengal Bay).

— Jenkins, Rem. Indian Ins., vol. 3, p. 25, 1910 ( ).—

Gilby, Mem. Queensland Mus., vol. 1, p. 43, 1912 (reference).√— Fowler, Proc. Acad.

— Seale, Philippine Journ. Sci., vol. 9, p. 78, 1914 (Hong Kong).

Nat. Madagascar, Poiss., p. 401?, 18??

Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 6, pl. (2) 233, fig. 2, 1866 (Java, Sumatra, Pinang, Singapore, Bintang, Banka, Borneo, Celebes, Amboina, Ceram, New Guinea).—Günther, ~~Challenger~~ Rep. Voy. Challenger, vol. 1, pt. 6, p. 46, 1880 (Arafura Sea, 35 to 49 fathoms), p. 53 (Philippines).

1975

Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. , 1880 (

Klunzinger, Sitzs. Ber. Akad. Wiss. Wien, math.-nat. Kl., vol. 80 pt. 1, 1 p. 406, 1879 (1880) (Endeavour River, Queensland).

— Macleay, Proc. Linn. Soc. New South Wales, vol. 6, p. 124, 1881 (Port Jackson; Port Essington).

— Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, p. 282, 1889 (Bengal Bay).

— Jenkins, Mem. Indian Inst., vol. 3, p. 25, 1910 ( ). —

Gilby, Mem. Queensland Mus., vol. 1, p. 43, 1912 (reference). ✓— Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 75, p. 204, 1925 (Delagoa Bay).

Pseudorhombus russelii Savage, Hist. Nat. Madagascar, Poiss., p. 473, 1891 (Zanzibar; Madagascar). — Meyer, Anal. Soc. Esp. Hist. Nat. Madrid, vol. 14, 1885, p. 40 (Manila Bay).

Pseudorhombus russelli Regan, Ann. Durban Mus., vol. 2, pt. 5, p. 208, fig. 1, 1920 (Natal).

— Barnard, Ann. South African Mus.,

number of localities given pertain
to the Philippines, though the other
localities in the Netherlands Indies,
China, Formosa, and Oceania visited
by the "Albatross" are included as well.

Likewise the prefatory remarks
given in the preceding volumes will
largely apply, especially the great
services rendered under Dr. Hugh

vol. 21, pt. 1, p. 388, pl. 27, fig. 2, June 1925 (East London; Delagoa Bay; 20 to 60 fathoms). — Reeves, Journ. Pan. Pac. Res. Inst., vol. 2, no. 3, p. 14, July - Sep. 1927 (Chefoo). — Sowerby, Naturalist Manchur., vol. 4, p. 180, 1930 (Pei tai Ho). 1976

Platophrys russellii Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 105, 1906 (1907) (Bulan).

Rhombus lentiginosus Richardson, Ann. Mag. Nat. Hist., vol. 11, suppl., p. 495, July 1843 (type locality: Port Essington).

Platessa balteata Richardson, Ichth. China Jap., (1846) p. 278, (type locality: Canton).

Platessa chrysoptera Richardson, Ichth. China Jap., p. 278, 1846 (type locality: Chinese coasts; Canton).

Rhombus polyspilos Bleeker, Naturk. Tijds. Nederl. Indië, vol. 4, p. 503, 1853 (type locality: Batavia, Java; Telok betong, south Sumatra).

Pseudorhombus polyspilus Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 7, pl. (6) 237, fig. 3, 1866-72 (Java, Sumatra, Singapore, Celebes, Batjan, Ceram); Verh. Kon. Akad. Wet. Amsterdam (Chine), vol. 18, p. 3, 1879 (China). — Klunzinger, Sitzb. Ber. Akad. Wiss. Wien, math.-nat. Kl., vol. 80, pt. 1, p. 406, 1879 (1880) (King George Sound, Queensland). — Jordan and Seale, Bull. Bur. Fisher., vol. 26, p. 45, 1906 (1907) (Cavite). — Jordan and Richardson, Bull. Bur. Fisher., vol. 37, p. 281, 1907 (Manila). — Ogilby, Mem. Queensland Mus., vol. 1, p. 43, 1912 (name). — Weber, Siboga Exped., vol. 57, p. 424, 1913 (Macassar; Saleyer).

— Reeves, Journ. Pan. Pac. Res. Inst., vol. 2, no. 3, p. 14, July Sep. 1927 (Chefoo). — McCulloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 280, Sep. 10, 1929 (reference). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 106, fig. 26, 1929 (Simalur; Sumatra; Madura; Celebes; Saleyer; Buton; Ambon; Aru).

— Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., vol. 1, p. 112, 1930 (Kominoto, Riu Kiu). — Chu, Biol. Bull. St. John's Univ. Shanghai, no. 1, p. 90, Jan. 1931 (Chefoo).

Paralichthys polyophius Fowler, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, vol. 12, p. 555, 1904 (Padang).

Rhombus suboocellatus (Van Hasselt) Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 6, 1866-72 (name in synonymy).

Tetrarhombus excisiceps Macleay, Proc. Linn. Soc. New South Wales, vol. 6, pt. 1, p. 126, pl. 2, July 1881 (type locality: Port Jackson, Australia [malformation]).

Pleuronectes mortonensis De Vis, Proc. Linn. Soc. New South Wales, vol. 7, pt. 3, p. 370, Oct. 28, 1882 (type locality: Moreton Bay, Queensland).

1979

Pseudorhombus multimaculatus (not Günther) Meyer, Anal. Soc. Espan. Hist. Nat. Madrid, vol. 14, p. 40, 1885 (north Celebes).

Neorhombus ocellatus De Vis, Ann. Rep. Queensland Mus., vol. —, p. —, 1886 (type locality: Caloundra, Queensland; name only).

Pseudorhombus andersoni Gilchrist, Mar. Investig. South Africa, vol. 3, p. 9, pl. 26, 1904 (type locality: South Africa).

Depth 2 to 2 1/5; head 2 4/5 to 3 2/3, width 4 to 5. Snout to lower orbit 4 1/8 to 4 7/8 in head from snout tip; lower orbit 4 to 4 7/8, subequal to little greater than snout, advanced slightly, opposite or slightly posterior; maxillary reaches 1/2 to 2/3 in lower orbit, expansion 1 1/2 to 2 in lower orbit, length 2 1/4 to 2 2/5 in head from snout tip; teeth anteriorly

above long slender canines, smaller posteriorly and smaller anteriorly below; bony interorbital narrow trenchant (ridge). Gill rakers 3 to 6 + 11, lanceolate, ½ gill filaments, which 1½ in lower orbit.

Scales 71 to 73 in lateral line to caudal base and 6 or 7 more on latter; 22 to 24 above, 30 to 32 below. Row of fine small scales along each dorsal and anal median membranes and fin bases scaly over larger median area. Left scales with 16 to 20 basal striae; apical denticles 34 to 38. Right scales cycloid, with 18 to 23 basal striae.

D. 73 to 80, fin height 2 1/8 to 2 3/4 in total head length; A. 56 to 60, fin height 2 1/4 to 2 1/3; caudal 1 1/8 to 1 1/5, rounded behind; least depth of caudal peduncle 2 1/8 to 3; left pectoral 1 2/5 to 2 1/4; ventral 2 3/4 to 2 1/2.

Left side umber, scarcely clouded, to variably clouded with blackish. Large dusky blotch at beginning of

straight section of lateral line and another smaller midway in latter. Often left side, inclusive of vertical fins with numerous fine close set dusky to blackish dots scattered all about. Often many numerous fairly close set dark rings, variable, frequently incomplete to obscure. Rings also extend over vertical fins. Fins with very pale brown ground color, all on left side with dark specks. Right side whitish, with darks dots showing faintly through fins.

Arabia, Natal, India, Andamans, Siam, Annam, East Indies, Philippines, China, Riu Kiu, Japan, North Australia, Queensland, New South Wales.

1982

21077. Abuyog, Leyte. July 26, 1909. Length 130 mm.

20461, 20462, 20464. Catbalogan, Samar. April 15, 1908. Length 90 to 174 mm.

5999, 6713, 12073. Cavite market, Luzon. December 1, 1908. Length 133 to ~~165~~ 250 mm.

12813. Cavite and San Roque markets. June 27, 1908. Length 193 mm.

5840. Davao, Mindanao. May 16, 1908. Length 238 mm.

1762. D. 5342. Endeavour Point, (S.), S. 58° E., 0.5 miles (lat. 10° 56' 55" N., long. 119° 17' 24" E.), Malampaya Sound, Palawan Island. December 23, 1908. Length 131 mm.

4935 to 4937. Iloilo market, Iloilo, Panay. March 29, 1908. Length 88 to 141 mm.

1903

5865. Malabang, Mindanao. May 21, 1908. Length 248 mm.

7632, 11643. Malampaya Island. December 26, 1908. Length 195 to 245 mm.

14146. Iloilo market. June 1, 1908. Length 151 mm.

6635. Iloilo market. March 28, 1908. Length 219 mm.

3 examples. Manila Bay outside harbor wall. December 12, 1907. Length 40 to 70 mm.

1 example. Manila market. December 12, 1907. Length 94 mm.

6772. Manila market. April 29, 1909. Length 264 mm.

17604. Manila market. July 29, 1908. Length 213 mm.

8490. Manttagum Bay, Palawan. April 2, 1909. Length 260 mm.

1955. D. 5518. Point Tagolo Light, S. 64° W., 8.7 miles (lat. 8° 48' N., long. 123° 31' E.), northern Mindanao. August 9, 1909. Length 121 mm.

19467, 19504. Ragay River, Ragay Gulf, Luzon. March 10, 1909. Length 133 to 212 mm.

A 1019. Buka Buka Island, Gulf of Tomini, Celebes. November 20, 1909. Length 173 mm.

5012. Sandakan Bay, Borneo. March 2, 1908. Length 210 mm.

[624]. Data not given. Length 149 mm.

1965

Pseudorhombus cinnamoneus (Schlegel)

Rhombus cinnamoneus Schlegel, Fauna Japonica, Poiss., pts. 10-14, p. 180, pl. 93, 1846 (type locality: bays of Japan). — Bleeker, Act. Soc. Sci. Ind. Néerl., (Jap.), vol. 3, p. 25, 1858 (reference).

Pseudorhombus cinnamoneus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 427, 1862 (compiled). — Kamiya, Class. Cat., p. 110, 1881 (Tokyo). — Ottshi, Journ. Imp. Bur. Fisher. Tokyo, p. 6, pl. 3, fig. 2, 1897 (south east Japan). — Ishikawa and Matsmura, Prelim. Cat. Fishes Mus. Tokyo, p. 25, 1897 (reference). — Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 174, 1906 (Tokyo, Tsuruga, Wakanoura, Kobe, Amchichi, Nagasaki, Takata, Kawatana). — Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 438, 1912 (Misaki; Shimizu). — Jordan, Tanaka, Snyder, ~~Annotat. Zool. Japan~~ Tokyo, ~~vol.~~ Journ. College Sci. Tokyo, vol. 33, p. 315, 1913 (compiled). — Tanaka, Fig. Descr. Fishes Japan, vol. 14, p. 231, pl. 65,

fig. 238, ——— 1913 (Japan).
— Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 116, 1920 (Kii). — Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, p. 296, 1925 (Tokyo; Choshi).
— Reeves, Journ. Pan Pac. Res. Inst., vol. 2, no. 3, p. 14, July-Sep. 1927 (Hong Kong and north). — Tanaka, Journ. Fac. Sci. Univ. Tokyo, sect. 4, Zool. vol. 3, pt. 1, p. 38, Nov. 4, 1931 (reference).
— Chu, Biol. Bull. St. John's Univ. Shanghai, ~~volume~~ no. 1, p. 90 ~~Tokyo Exp. Mus.~~ Jan. 1931 (reference). — Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., vol. 2, p. 124, 1931 (Nagasaki); Comptes Rend. Acad. Sci. U. R. S. S., p. 315, 1931 (Fusan, Korea).
Rhombiscus cinnamomeus Jordan and Snyder, Proc. U. S. Nat. Mus., vol. , p. 379, 1900 (Tokyo); Annot. Zool. Japon. Tokyo, vol. 3, p. 121, 1901 (Yokohama, Nagasaki, Hakodate). — Jordan and Seale, Proc. Davenport Acad. Sci., vol. 10, p. 16, 1905 (Hong Kong).

1987

Rhombus oligodon Bleeker, Naturk. Tijds. Nederl. Indië, vol. 6, p. 419, 1854 (type locality: Nagasaki); Verh. Batavia. Genoot. (Jap.), vol. 26, p. 121, 1857); Act. Soc. Sci. Ind. Néerl., vol. 5, p. , pl. 3, fig. 2, 1858-59.

Paralichthys oligodon Jordan and Snyder, Annot. Zool. Jap., vol. 3, p. 121, 1901 (reference).

Pseudorhombus oligodon Jordan and Evermann, Proc. U. S. Nat. Mus., vol. 25, p. 365, 1902 (Formosa). — Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 177, 1906 (Formosa). — Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 438, 1912 (Shimizu, Tsuruga, Formosa). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 315, 1913 (reference). — Jguka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, p. 116, 1920 (Boshiu). — Reeves, Journ. Pan Pac. Res. Inst., vol. 2, no. 3, p. 14, July-Sep. 1927 (North China; Amoy). — Weber and Beaufort, Fishes Indo

Austral. Archip., vol. 5, p. 101, 1929 (Bankka Straits, South China Sea, Java Sea, Java, Madura Strait, Madura, Macassar Strait, Saleyer). — Schmidt and Lindberg, Bull. Acad. Sci. U. R. S. S., p. 1147, 1930 (Tsuruga?). — Chu, Biol. Bull. St. John's Univ. Shanghai, no. 1, p. 90, Jan. 1931 (reference). — Chevey, Inst. Océan. Indo Chine, 19e note, p. 27, Aug. 25, 1932 (Cochin China; Annam).

Pseudorhombus misakius Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 175, figs. 4–5, 1906 (type locality: Kobe; Misaki; Tsuruga; Wakanoura). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 316, 1913 (~~misaki~~ reference). — Seale, Philippine Journ. Sci., vol. 9, p. 78, 1914 (Hong Kong). — Iguka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 116, 1920 (Tokyo). — Schmidt and Lindberg, Bull. Acad. Sci. U. R. S. S., p. 1147, 1930 (Tsuruga). — Chu, Biol. Bull. St. John's Univ., Shanghai,

No. 1, p. 90, Jan. 1931 (reference). Pseudorhombus arsius (not Buchanan-Hamilton) Jenkins, Mem. Indian Mus., vol. 3, p. 24, 1910 (part).

Depth 1 9/10 to 2 1/6; head 3 3/5 to 3 3/4, width 4 1/2. Snout to lower orbit 4 3/5 in head from snout tip; lower orbit 4 3/5 to 5 3/4, subequal with snout, opposite; maxillary reaches opposite hind edge of lower eye or 3/4 in lower orbit, length 2 1/10 to 2 1/3 in head from snout tip (expansion 1 3/4 in lower orbit); teeth pointed, rather irregular; bony interorbital rather high, trenchant keel, width 1/2 of pupil. Gill rakers 2 + 8 to 10, lanceolate, 3/4 gill filaments, which 1 2/3 in lower orbit.

Scales 77 in lateral line to caudal base and 6 more on latter; 31 above, 33 below. Scales with 10 or 11 basal radiating striae; 17 to 19 ~~row of~~ slender apical denticles; circuli very fine, less distinct apically. Vertical fin rays finely scaled. Muzzle and maxillary largely naked. Scales all ctenoid.

Arch of lateral line 2 3/4 in straight section to caudal base.

D. 7 8 or 7 9, fin height 2 1/4 in total head length; A. 61 to 63, fin height 2 2/5; caudal 1 1/5 to 1 2/5, broadly cuneate behind; least depth of caudal peduncle 2 2/3; left pectoral 1 1/3 to 1 3/5 in head; right pectoral 2 1/4; ventral 3 to 4.

Brown on left side. Obsolete large blackish spot at angle of lateral line. Eyes neutral gray. Fins pale brown, with slightly darker specks, most distinct terminally. Obscure dark cross streaks on ventral, none on ♂ uniform rather pale pectoral.

East Indies, Cochin China, China, Formosa, Korea, Japan.

.. Trans. Godeffroy, band 4, 1874, p. 113, plate 74 (Society Islands, Paumotu, Samoa, Hervey Islands, Kingsmills, Gilbert Islands). — Day, Fishes of India, Suppl., 1888, p. 789. — Day, Fauna British India, vol. 2, 1889, p. 141. — Sauvage, Hist. Nat. Madagascar, Poiss., 1891, p. 338. — Steindachner, Abhandl. Senckenberg. Gesell., band 25, 1900, p. 426 (Ternate). — Weber, Siboga Exped., band 57, 1913, p. 318 (Saleyer). — Pellegrin, Bull. Soc. Zool. France, tome 39, p. 227 (Diégo Suarez, Madagascar).

Acanthurus gahhm Rüppell, Neu. Wirbelth. Fische, 1835, p. 131 (Red Sea). — Bleeker, Act. Soc. Ind. Neerl., vol. 3, no. 4, 1857–58, pp. 3, 8 (Macassar); l.c. no. 5, 1857–58, p. 2 (Macassar).

Acanthurus (Rhombotides) gahm Klunzinger, Fisch. Roth. Meer., 1884, p. 84.

Acanthurus gahmoides Guichenot, Notes D. Réunion, tome 2, 1862, p. 6 (25). Reunion.

9748. Kowloow, China. Oct. 1991
5, 1908. Length 168 mm.

Hepatus nigricans (Linnaeus).

Chaetodon nigricans Linnaeus, Syst. Nat., ed. 10, 1758, p. 274. Red Sea. — Linnaeus, l. c., ed. 12, 1766, p. 462. — Bloch, Naturg. Ausl. Fische., band 3, 1787, p. 52 (not plate, part). — Gmelin, Syst. Nat. Linn., 1789, p. 1245 (Red Sea).

Chetodon nigricans Bonnaterre, Tabl. Ichth., 1789, p. 83, plate 45, fig. 171 (Red Sea).

Harpurus nigricans Forster, Fauna Indica, 1795, p. 15.

Acanthus nigricanus Lacépède, Naturge., band 4, 1799, p. 375.

Acanthurus gahm Rüppell, Atlas Reise. Nordl. Afr. Fische, 1828, p. 58 (Djedda and Massauah). — Valenciennes, Hist. Nat. Poiss., vol. 10, 1835, p. ~~160~~ 219 (Red Sea and Mauritius). — Günther, Cat. Fish. Brit. Mus., vol. 3, 1861, p. 338 (copied). — Klunzinger, Verh. zool. bot Ges. Wien, band 21, 1871, p. 506 (Red Sea). — Günther, Journ.

1992

Pseudorhombus condorensis Chabanaud

— Chevey, Inst. Océan. Indo Chine, 19e Note, p. 27, Aug. 25, 1929 (Puolo Condore).

Chocolate brown generally. Eyes dusky brown. Blackish postocular bar , extends short distance behind shoulder. Groove of caudal spine blackish, with black streak extending forward on side of tail, for several times length of spine at least. Fins all deep brown, with dusky tinge. Hind caudal edge narrowly whitish. Hind pectoral edge rather broadly whitish or pale. Some examples, especially small ones, show pale gray base.

Red Sea, ~~to~~ India, Mauritius, the East Indies, Melanesia, Micronesia, ~~and~~ Polynesia, Hawaii.

1993

Pseudorhombus diplospilus Norman

Pseudorhombus diplospilus Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 226, fig. 1, June 15, 1926 (type locality: Hervey Bay, Queensland). — McCulloch, Austral. Mus. Mem., ~~vol.~~ no. 5, pt. 2, p. 280, Sep. 10, 1929 (reference).

6261 and 6262. Medio Island, Galera Bay, Mindanao. June 9, 1908. Length 325 to 384 mm.

8197. Port Busuin, Burias Island. March 8, 1909. Length 263 mm.

A998 and A999, A1035. Buton Island, Celebes. November 20, 1909. Length 285 to 293 mm.

1994

Pseudorhombus dupliciocellatus Regan

Pseudorhombus dupliciocellatus Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 15, p. 25, 1905 (type locality: Inland Sea of Japan). — Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 177, 1906 (compiled). — Ogilby, Mem. Queensland Mus., vol. 1, p. 44, 1912 (off Pine Peaks and Cape Gloucester, 25 to 36 fathoms). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 346, 1913 (copied). — Norman, Biol. Res. Endeavour, no. 5, p. 228, fig. 2, 1926

Rec. Indian Mus., vol. 29, pt. 1, p. 10, April 1927 (Nicobars). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 102, 1929 (Java Sea, 100 meters). — McCulloch, Austral. Mus. Mem., no. 5, pt. 2, p. 278, Sep. 10, 1929 (compiled).

1995

Pseudorhombus dupliocellatus Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., vol. 2, p. 124, 1931 (Misaki).

Pseudorhombus palad Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 105, fig. 21, 1906 (1907) (type locality: Bulan, Philippines).

Pseudorhombus cartwrighti Ogilby, Mem. Queensland Mus., vol. 1, p. 47, Nov. 27, 1912 (type locality: Moreton Bay [Brisbane market]).

1996

Pseudorhombus elevatus Ogilby

Pseudorhombus elevatus Ogilby, Mem. Queensland Mus., vol. 1, p. 45, 1912 (type locality: Bulwer, Moreton Bay). — Norman, Biol. Res. Endeavour, no. 5, p. 234, fig. 3, 1926

Rec. Indian Mus., vol. 29, pt. 1, p. 15, April 1927 (Persian Gulf, Travancore, Madras, Ganjam, Orissa, Puri, Sandheads, Elephant Point). — Chevey, Inst. Océan. Indo Chine, 19e note, p. 27, Aug. 25, 1932 (Annam). — McCulloch, Austral. Mus. Mem., no. 5, pt. 2, p. 279, Sep. 10, 1929 (reference).

Pseudorhombus javanicus (not Bleeker) Day, Fishes of India, pt. 3, p. 424, pl. 92, fig. 2, 1877 (part). — Jenkins, Mem. Indian Mus., vol. 3, p. 24, 1910 (part).

1997

Pseudorhombus affinis Weber, Siboga Exped., vol. 57, p. 426, pl. 11, fig. 1, 1913 (type locality: Saleyer, 18 to 46 meters). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 110, fig. 25 (copied) (type; Flores; Malacca Strait).

1998

Pseudorhombus guttulatus Macleay

Pseudorhombus guttulatus Macleay, Proc. Linn. Soc. New South Wales, vol. 8, p. 276, 1883 (type locality: Hood Bay, New Guinea). — Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 412, 1905 (1906) (name). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 115, 1929 (copied).

— Fowler, Mem. Bishop Mus., vol. 10, p. 93, 1928 (compiled).

1999

Pseudorhombus javanicus (Bleeker)

Rhombus javanicus Bleeker, Natuurk. Tijds. Nederl. Indië, vol. 4, p. 502, 1853 (type locality: Batavia, Java).

Pseudorhombus javanicus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 427, 1862 (no locality). — Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, no. 3, p. 282, 1889 (Bengal Bay). [illegible] (Madras). — Jenkins, Mem. Indian Mus., vol. 3, no. 1, p. 24, 1910

— Seale, Philippine Journ. Sci., vol. vol. , p. 287, 1910 (Sandakan Bay, Borneo). — Weber, Siboga Exped., vol. 57, p. 424, 1913 (Macassar). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 109, 1929 (Java, Java Sea, Celebes, Malacca Strait). — Chevey, Inst. Océan. Indo Chine, 19e Note, p. 27, Aug. 25, 1932 (Cochin China, Poulo-Condore, Annam).

1999

Pseudorhombus javanicus (Bleeker)

Rhombus javanicus Bleeker, Naturk. Tijds. Nederl. Indië, vol. 4, p. 502, 1853 (type locality: Batavia, Java).

Pseudorhombus javanicus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 427, 1862 (no locality). — Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 8, pl. (1) 222, fig. 3, 1866-72 (Java). — Day, Fishes of India, pt. 3, p. 424, pl. 92, fig. 2, 1877 (Madras). — Jenkins, Invest. Indian Mus., vol. 3, no. 1, p. 24, 1910

— Seale, Philippine Journ. Sci., vol. vol. , p. 287, 1910 (Sandakan Bay, Borneo). — Weber, Siboga Exped., vol. 57, p. 424, 1913 (Macassar). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 109, 1929 (Java, Java Sea, Celebes, Malacca Strait). — Chevey, Inst. Océan. Indo Chine, 19e Note, p. 27, Aug. 25, 1932 (Cochin China, Poulo-Condore, Annam).

depth 2; head 2 4/5 to 3 1/5, width 3 1/5 to 4. Snout to lower orbit 4 to 4 4/5 in head from snout tip; lower orbit 4 1/4 to 5 1/5, 1 to 1 1/8 in snout; eyes nearly or quite opposite, or upper or lower very slightly in advance; interorbital narrow bony ridge, with very slight groove. Gill rakers 5+9, lanceolate, compressed, 1/2 gill filaments, which 1 2/5 in lower orbit. maxillary reaches 2/5 to 3/5 in lower orbit, expansion 1 1/2 to 2 in lower orbit, length 2 1/4 to 2 2/5 in head from snout tip;

Scales 70 or 71 in lateral line to caudal base and 5 more on latter; 25 above, 24 below. Vertical fins scaly. Left scales ctenoid, right ones cycloid. Scales with 14 to 19 basal radiating striae; 20 to 42 rather short slender apical denticles, with 1 or 2 transverse

series of basal elements; circuli fine, more or less complete. Lateral line on both sides, arch 2 2/5 to 3 2/5 in straight section to caudal base; forward extension reaches base of tenth dorsal ray on left side.

D. 70 to 75, first rays shorter than those following, fin height 2 1/8 to 2 1/5 in total head length; A. 55 to 58, fin height 2 1/8 to 2 1/3; caudal 1 1/5 to 1 2/5, convex behind; least depth of caudal peduncle 2 1/8 to 2 1/2; pectoral 1 1/2 to 1 2/3; ventral 2 1/3 to 2 3/4.

Left side brown. Close above and just behind curve of lateral line dark brown to blackish blotch, sprinkled or bordered somewhat with small whitish specks. One or 2 similar spots on lateral line posteriorly. Whole left also with many wide set or scattered pale to whitish spots,

somewhat ringed with darker brown, largest but little larger than eyed and others, especially towards edges of body smaller. Fin rays of left side all sprinkled with dark specks, variable. Orbits neutral gray. Right side whitish, only slightly darker specks on rays of vertical fins.

India, Malaya, East Indies, Philippines, Indo China.

7 examples. Buena Vista, Guimaras Island. January 4, 1909. Length 39 to 120 mm.

D. 5360. Corregidor Light, N. 74° W., 6.9 miles (lat. 14° 21' N., long. 120° 41' E.), Manila Bay. 9m 12 fathoms. February 7, 1909. Length 109 mm.

1 example. Panabutan Bay, Mindanao. February 5, 1906. Length 127 mm.

A1554. Tow Wan, Formosa. January 25, 1910. Length 216 mm.

6 examples U.S.N.M. Mauritius. Colonel Nicholas Pike. Length 154 to 198 mm.

51048 U.S.N.M. Hawaii. Bureau of Fisheries. Length 140 mm. As Hepatus bipunctatus.

52340 U.S.N.M. Apia, Samoa. Bureau of Fisheries. Length 60 to 168 mm. As Hepatus elongatus, but certainly with black spot last dorsal ray bases and also of anal, also caudal deeply lunate.

1 example (with 52496 U.S.N.M). Apia, Samoa. Bureau of Fisheries. Length 58 mm. As Hepatus nigricans.

55091 U.S.N.M. Hawaii. Albatross Collection. Length 148 to 175 mm. 4 examples.

66050 U.S.N.M. Truk Island. Albatross Collection. Length 40 mm. As ~~Hepatus~~ Teuthis elongatus

Pseudorhombus malayanus Bleeker

Pseudorhombus malayanus Bleeker, Nederl. Tijds. Dierk., vol. 3, p. 43, 1866 (type locality: Batavia, Java; Sumatra; Singapore; Borneo; Celebes; Amboina); Atlas Ichth. Ind. Néerl., vol. 6, p. 7, pl. (3) 234, fig. 2, 1866-72 (above localities). — Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 1, no. 3, p. 282, 1889 (Bengal Bay). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, p. 281, 1907 (1908) (Manila). — Bean and Weed, Proc. U. S. Nat. Mus., vol. 42, p. 610, 1912 (Batavia). — Weber, Siboga Exped., vol. 57, p. 425, 1913 (Madura Strait; Saleyer). — Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 12, April 1927 (Puri, Balasore Bay, Vizagapatam, Khulna, Bengal Bay, Elephant Point, Madras). — Tirant, Nov. Ocean. Pêch. Indo Chine, 6e note, p. 172, 1929 (Phu Yen). — Chevey, Inst. Ocean.

Indo Chine, 19e note, p. 27, Aug. 25, 1929 (Annam).

Depth 1 4/5 to 2; head 3 1/5 to 3 2/3, width 4 to 4 1/5. Snout to lower orbit 4 7/8 to 5 in head from snout tip; lower orbit 5 to 5 1/4, 1 1/8 to 1 1/5 in snout, slightly in advance, opposite or slightly behind upper orbit; maxillary reaches 3/4 to hind orbital edge, expansion 1 2/3 to 1 3/4, in lower orbit, length 2 to 2 1/4 in head from snout tip; bony interorbital narrow, about 2/3 pupil diameter. Gill rakers 6+9, lanceolate, short, compressed, 1/2 in gill filaments, which 1/2 of louter orbit.

Scales 68 to 70 in lateral line to caudal base and 4 or 5 more on latter; 25 or 26 above, 27 or 28 below. Scales all more or less ctenoid, with row along each dorsal and anal ray and 2 rows on each caudal ray. Scales with 13 to 15

basal radiating striae; 17 to 25 slender terminal apical denticles and 3 or 4 more rows transversely of short basal ones; circuli fine, less distinct apically. Arch of lateral line 2 1/5 to 2 2/5 in straight section to caudal base.

D. 70 to 72, fin height 2 to 2 1/4 in total head length; A. 55 to 60, fin height 2 to 2 1/4; caudal 1 1/5 to 1 1/4, forms broad obtuse angle behind; least depth of caudal peduncle 2 1/2 to 2 3/4; pectoral 1 1/3 to 1 1/2; ventral 2 1/2 to 2 3/5.

Left side largely dull uniform brown, with trace of

A very well marked species, with the front profile of the evenly and convexly rounded head, the light yellowish caudal fin, in contrast with the rest of the general dark uniform coloration will readily distinguish the species.

(Flavus, yellow; cauda, tail.)

very obscure, irregular, variable scattered and slightly larger darker spots. Orbits dull neutral gray. Fins paler than body and traces of very obsolete though slightly darker blotches and specks. Paired fins uniform.

India, Malaya, East Indies, Indo China, Philippines. Appears slightly more even or more uniformly ellipsoid in contour than Pseudorhombus arsius.

Hepatus flavicauda new species.

Depth 2 ⅔ to 2 ⅕; head 3 ⅔ to 3 ⅞, width 1 ⅔ to 1 ⅞. Snout 2 to 2 1/10; eye 3 to 4, 1 ¼ to 1 ⅘ in snout, 1 ⅓ to 1 ½ in interorbital; teeth 22 or 23 in each jaw; maxillary 4 ⅕ to 4 ⅓ in head; interorbital 2 ½ to 3 ⅔, broadly convex; opercle and preopercle flanged with vertical striae or grooves. Gill rakers 6 + 10, short, flexible points.

Scales with extremely fine ⅔ circuli; apical denticles 14 to 16, and 14 series of low ones transversely on basal elements.

D. IX, 24 or 25, ninth spine 1 ⅞ to 2 in head, fourteenth ray 1 ½ to 1 ⅔; A. III, 24 or 25; third spine 2 ⅔ to 2 ⅘, first ray 1 ⅞ to 2; caudal deeply lunate, with long slender points, 2 ⅖ to 2 ⅔ in combined head and body; least depth of caudal peduncle 2 ⅓ to 2 ⅘ in head; pectoral 3 to 3 ⅛ in combined head and body; ventral 1 ⅕ to 1 ¼ in head; caudal spine 2 ½ to 3 ¼.

Head and body uniform chocolate color. Iris olive-dusky. Dorsals, anals and paired fins more or less dusky, latter with ventral or deep gray tints, sometimes with olive tinge on pectoral basally. Caudal pale yellowish buff, well contrasted with rest of body.

Known from the Philippines, through our series of examples listed below.

21423. Bacoor, Luzon. June 15, 1908. Length 125 mm. rubl.

↑ 6869. D. 5308. China sea, vicinity of Hong Kong (lat. 21° 54' N., long. 115° 42' E.). In 62 fathoms. November 4, 1908. Length 233 mm.

12285, 12293. Manila market, Luzon. December 12-18, 1908. Length 97 to 121 mm.

1821. D. 5204. Mariquitdaquit Island, N. 88° E., 3.56 miles (lat. 11° 04' 18" N., long. 125° 05' 30" E.), off east coast of Leyte. In 15 fathoms. April 11, 1908. Length 155 mm.

4265. D. 5209. Jaratara Island (N.), S. 53° W., 1.80 miles (lat. 11° 45' 25" N., long. 124° 48' 05" E.), off western Samar. April 14, 1908. In 20 to 26 fathoms. Length 138 mm.

21423. Bacoor, Luzon. June 15, 1908. Length 125 mm.

4204, 4206, 4209. D. 5361. Corregidor Light, S. 89° W., 7.2 miles (lat. 14°24'15" N., long. 120°41'30" E.), Manila Bay, Luzon. February 8, 1909. Length 156 to 168 mm.

12285, 12293. Manila market, Luzon. December 12-18, 1908. Length 97 to 121 mm.

1821. D. 5204. Mariquitdaquit Island, N. 88° E., 3.56 miles (lat. 11°04'18" N., long. 125°05'30" E.), off east coast of Leyte. In 15 fathoms. April 11, 1908. Length 155 mm.

4265. D. 5209. Jaratara Island (N.), S. 53° W., 1.80 miles (lat. 11°45'25" N., long. 124°48'05" E.), off western Samar. April 14, 1908. In 20 to 26 fathoms. Length 138 mm.

2009

4502. D. 5580. Sibutu Island peak, S. 82° E., 23.2 miles (lat. 4° 52' 45" N., long. 119° 06' 45" E.), vicinity of Darvel Bay, Borneo. In 1612 fathoms. Length 164 mm.

2010

Pseudorhombus megalops new species

depth 2 to 2 1/5; head 3 to 3 1/8, width 3 3/4 to 4. Snout to lower orbit 4 1/4 to 4 2/3 in head from snout tip; lower orbit 3 2/5 to 3 3/4, greatly exceeds snout, slightly in advance of upper orbit; maxillary reaches 1/2 to 3/5 in lower orbit, expansion 2 to 2 1/5 in lower orbit, length 2 1/10 to 2 1/8 in head from snout tip; mandibular angle with obtuse though prominent projection in lower front profile; teeth uniserial, conic, larger anteriorly in jaws; bony interorbital very narrow, 1/2 of pupil. Gill rakers 7+16, slender, lanceolate, 1 1/5 in gill filaments,

Hepatus marginatus (Valenciennes).

Acanthurus marginatus Valenciennes, Hist. Nat. Poiss., vol. 10, 1835, p. 462. No locality. [Caroline Islands.] — Günther, Cat. Fish. Brit. Mus., vol. 3, 1861, p. 133 (copied). — Günther, Journ. Mus. Godeffroy, band 4, 1875, p. 111 (copied).

Acanthurus guttatus (non Schneider). Kittlitz, Mus. Senckenberg., band 1, 1834, p. 194, plate 13, fig. 4 (Luganor, Carolines).

Red disk brown, with scattered blue dots on head and trunk. Vertical fins blackish brown. Dorsal and anal with blue edges. Reaches 114 mm. (Kittlitz).

which 1/2 of orbit.

Scales 63 to 66 in lateral line to caudal base and 5 to 7 more on latter; 23 or 24 above, 26 to 28 below. Snout and muzzle naked. Very few small scales at upper part of maxillary expansion. Most dorsal and anal rays, except few posteriorly, with row of fine scales and 2 rows to each caudal ray. Scales of left side with 13 to 20 basal radiating striae; 13 or 14 slender apical denticles in terminal row, with 1 or 2 more low basal series; circuli fine, less distinct apically. Right scales cycloid. Lateral line complete and well developed on both sides. Arch of lateral line 2 1/8 to 2 1/5 in

Hepatus chrysoxoma (Bleeker).

Acanthurus chrysoxoma Bleeker, Nat. Tijds. Ned. Indië, deel 13, 1857, p. (56)57. Kajeli, Buru. — Bleeker, l.c., deel 20, 1859-60, p. 206 (Boleling, Bali). — Günther, Cat. Fish. Brit. Mus., vol. 3, 1861, p. 332 (copied).

Known by its uniform yellow color, vertical fins edged with dusky. The types do not exceed 51 mm.

East Indies and Polynesia.

straight section to caudal base, with upper front extension directed toward ninth dorsal ray.

D. 64 to 68, fin height 2 2/5 to 2 3/4 in total head length; A. 50 to 53, fin height 2 2/7 to 2 1/3; caudal 1 1/4 to 1 1/3, with broad obtuse angle formed from median rays behind; least depth of caudal peduncle 3 1/2 to 3 2/3; pectoral 1 3/5 to 1 2/3; left ventral 2 7/8 to 3.

Pale warm brown on left side, with row of 5 obscure though darker rings above lateral line and 4 below, spaced opposite. Near dorsal and anal profiles of body row of dark blotches falling opposite interspaces of rings. Iris neutral or slate

A deep bodied species, the depth 1 1/2 to 2, and color dark brown. Broad whitish band from ~~the~~ anterior dorsal origin down over postocular and narrower pale band across caudal base transversely.

Melanesia, Micronesia, Polynesia, Hawaii.

5-245-6 U.S.N.M. Apia, Samoa. Bureau of Fisheries. Length 48 & 137 mm. 2 examples.

65-67 2 U.S.N.M. Coral Bay, Easter Island. Albatross Collection. Length 215 mm.

5-071/2 U.S.N.M. Honolulu. Dr. O.P. Jenkins. Type of Teuthis leucopareia.

5-5582 U.S.N.M. Pualoa Bay, Hawaii. Albatross Collection. 2 examples.

83261 U.S.N.M. No locality, likely Oceania? Wilkes Exploring Expedition. Length 83 mm.

gray. Fins all paler than ground color, with obscure though dark spots about outer portions of fins. Right side of body uniformly pale or whitish, darker spots of fins showing through inconspicuously.

Diagnosis. This species appears to be related to those arranged by Weber and Beaufort under the genus with the scales cycloid on the blind or right side and maxillary reaching the middle of the eye. From the species with depth 1 4/5 to 2 1/2 Pseudorhombus javanicus (Bleeker), P. affinis (Weber), P. neglectus Bleeker, P. argus Weber and P. pentophthalmus Günther, all differ in the fewer gill rakers but 11 to 13. P. megalops is known readily by its very

Hepatus leucopareius (Jenkins).

Xenthis leucopareius Jenkins, Bull. U.S. Fish Comm., vol. 22, 1902 (1903), p. 476, fig. 28, Honolulu.

Hepatus leucopareius Jordan and Evermann, Bull. U.S. Fish Comm., vol. 23, pt. 1, 1903 (1905), p. 386, fig. 167 (Honolulu, Hilo, Waikiki). — Fowler, Bishop Mus. Bull., no. 22, 1925, p. 12 (Guam), p. 28 (Honolulu).

Xenthis umbra Jenkins, l.c., p. 477, Honolulu. — Jordan and Evermann, l.c., vol. 23, pt. 1, 1903 (1905), plate 47.

Xenthis bishopi Bryan and Here, Occas. Pap. Bishop Mus., vol. 2, no. 1, 1902, p. 134. Marcus Island.

large and conspicuous eyes, not like those of any related species.

U. S. N. M., no. 5392. type.
2196, 2197, ~~D. 5393.~~ D. 5393.
Panganalan Point, Talajit Island, S. 59° E., 14.8 miles (lat. 12° 03' 30" N., long. 124° 03' 36" E.), between Samar and Masbate. In 136 fathoms. March 13, 1909. Length 167 to 170 mm. Paratypes.

~~also Cyprodinodon [illegible] D. 5396.~~

2320. D. 5396. Panalangan Point, Talajit Island, S. 78° E., 4.5 miles (lat. 11° 57' N., long. 124° 12' 24" E.), between Samar and Masbate. In 137 fathoms. March 15, 1909. Length 169 mm. Paratype.

distinguished chiefly by its uniformly dark brown coloration and the addition of a black spot at the bases of the last dorsal and anal rays.

Melanesia, Micronesia, Polynesia, Hawaii.

51048 U.S.N.M. Hawaiian Islands. Bureau of Fisheries.

5234 U.S.N.M. Apia, Samoa. Bureau of Fisheries. 3 examples.

55091 U.S.N.M. Hawaiian Islands. Albatross Collection. 4 examples.

66050 U.S.N.M. Truk Islands. Albatross Collection.

51759 U.S.N.M. Apia, Samoa. Bureau of Fisheries. Type of Hepatus aquilinus.

2015

8327. D. 5397. Panalangan Point, Talajit Island, S. 78° E., 6 miles (lat. 11° 57' 27" N., long. 124° 10' 42" E.), between Samar and Masbate. In 134 fathoms. March 15, 1909. Length 185 to 217 mm. 2 examples.

2016

3515 to 3517. D.5392. Tubig Point, N. 49° E., 5 miles (lat. 12°12'35" N., long. 124°02'48" E.), between Samar and Masbate. In 135 fathoms. March 13, 1909. Type 3517, 188 mm, other paratypes 178 to 183 mm.

Ishikawa and Matsuura, Prelim. Cat. Fish. Imp. Tokyo, 1897, p. 34.

Acanthurus bipunctatus Ginther, Cat. Fish. Brit. Mus., vol. 3, 1861, p. 331. China and Fiji.

— Elera, Cat. Faun. Filip., vol. 1, 1895, p. 502 (Luzon, Cavite).

Teuthis bipunctatus Jordan and Evermann, Proc. U. S. Nat. Mus., vol. 25, 1902, p. 358 (Kotosho). — Jordan and Fowler, Proc. U. S. Nat. Mus., vol. 25, 1902, p. 574 (Formosa, Misaki, Riukiu).

Hepatus agilinus Jordan and Veale, Bull. Bur. Fisher., vol. 25, 1905 (1906), p. 353, fig. 66. Apia, Samoa.

2017

Pseudorhombus microgmathus Norman

Pseudorhombus microgmathus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 16, pl. 3, April 1927 (type locality: Puri Beach, Orissa).

Pseudorhombus javanicus (not Bleeker) Day, Fishes of India, pt. 3, p. 424, 1927 (part). — Jenkins, Mem. Indian Mus., vol. 3, p. 24, 1910.

Hepatus elongatus (Lacépède).

Chaetodon elongatus Lacépède, Hist. Nat. Poiss., tome 4, 1802, pp. 454, 473, plate 6, fig. 2. The Great Ocean (Indo-Pacific).

Hepatus elongatus Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903 (1905), p. 389 (Honolulu and Hoolsena).

— Jordan and Richardson, Bull. Bur. Fisher., vol. 27, 1907 (1908), p. 270 (Cagayancillo).

— Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 510 (Okinawa record). — Fowler and Ball, Bishop Mus. Bull., no. 26, 1925 (1926), p. 18 (Wake Island).

Acanthurus nigroris Valenciennes, Hist. Nat. Poiss., vol. 10, 1835, p. ~~157~~ 208. Hawaiian Islands.

Acanthurus nigror Günther, Cat. Fish. Brit. Mus., vol. 3, 1861, p. 332. Aneiteum, New Hebrides. — Günther, Journ. Mus. Godeffroy, band 4, 1875, p. 110 (type; Pelew Islands and Tahiti). — Elera, Cat. Faun. Filip., vol. 1, 1895, p. 532 (Coast of Samar). —

Depth 2; head 2 4/5 to 3, width 4 to 4 1/5. Snout to lower orbit 3 2/3 to 3 3/4 in [redacted] head from snout tip; lower orbit 3 1/2 to 3 2/3, subequal with snout, in small example about 1/8 posterior to front of upper orbit, in larger lower orbit 1/4 in advance; maxillary reaches about 1/2 in [redacted] lower orbit, expansion 2, length 2 in head from snout tip; interorbital narrow bony keel. Gill rakers 3+9, lanceolate, 2 1/2 in lower orbit; gill filaments 3/4 of gill rakers.

Scales 64 to 66 in lateral line to caudal base and 5 more on latter; 25 above, 23 below. Vertical fin rays with row of

Chetodon mesoleucos Bonnaterre, Tabl. Ichth., 1788, p. 20 (Red Sea).
Holacanthus mesoleucus Lacépède, Hist. Nat. Poiss., vol. 4, 1802, pp. 528, 535 (Japan).
Chaetodon (Linisochaetodon) mesoleucus Klunzinger, Fische Roth. Meer., 1884, p. 57.
Chaetodon kalyan Schneider, Syst. Ichth. Bloch, 1801, p. 227. Arabia. — Lacépède, l.c., pp. 457, 484 (Arabia).

D. XIII, 22 or 23; A. III, 19. Front half of body, with paired fine, whitish, posterior half dark brown with fine darker vertical lines following scale courses. Dark ocular band narrower than eye and not extending below cheek.

Red Sea, Japan.

fine scales along basally. Snout and mandible naked, maxillary with few small scales terminally. Scales with 10 or 11 well developed basal radiating striae on left side; 16 or 17 apical denticles with 3 transverse series of basal elements; circuli fine. Right scales cycloid. Lateral line on both sides, arch 2 to 2 1/5 in straight section to caudal base.

D. 70, fin height 2 1/8 to 2 1/5 in total head length; A. 53 or 54, fin height 2 1/8; caudal 1 1/4 to 1 2/5, convex behind; least depth of caudal peduncle 3 to 3 1/8, pectoral 1 1/4 to 1 3/5; ventral 2 1/2 to 2 3/5.

Chaetodon mesoleucos Forskål.

Chaetodon mesoleucos Forskål, descript. Animal., 1775, pp. XII, 61. Mochha, Red Sea. — Gmelin, Syst. Nat. Linn., 1789, p. 1266 (Arabia). — Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 43 (Moka).

Chaetodon mesoleucus Bloch, Naturg. Ausl. Fische., band 3, 1787, p. 117, plate 216, fig. 2 (Japan). — Walbaum, Arted. Pisc., vol. 3, 1792, p. 411 (on Bloch). — Schneider, Syst. Ichth. Bloch, 1801, p. 227 (Indian Sea; Japan). — Rüppell, Neue Wirbelth. Fische, 1835, p. 29, plate 9, fig. 1 (Djedda). — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 28 (Red Sea). — Kaup, Arch. Naturges., band 28, abth. 1, 1860, p. 151. — Klunzinger, Verh. zool. bot. Ges. Wien, band 20, 1870, p. 782 (Red Sea). — Ahl, Arch. Naturges., band 89, abth. A, heft 5, 1923, p. 173 (Jedda at Mecca).

Left side brown, with 5 conspicuous dark brown ocelli, each ringed with white which in larger specimen as ~~seems~~ rings of small white dots., Body, also head on left side, marked with numerous variable whitish spots which also more or less entirely to partly ringed with dark brown, also all smaller than 5 large ocelli. Orbits gray. First ^ at 2 pairs with 2 above and 2 below lateral line of which first upper on arch of lateral line. Fifth ocellus close on lateral line posteriorly.

Dorsal ~~and~~ anal ~~fin black~~, pale, each with row of well spaced blackish brown blotches ~~more or less~~ ~~indistinct~~ ~~y~~ subaxally alternating

1 2/3 to 2, tenth ray 1 2/3 to 2; least depth of caudal peduncle 3 1/10 to 3 1/3; caudal convex behind, 1 3/5 to 2; pectoral 1 1/6 to 1 2/5; ventral 1 to 1 1/3.

Dull brown generally, paler below. Broad black band traverses eye vertically, narrowed above and uniting with its fellow at predorsal, broad below but not on chest. Broad vertical blackish brown band from first half of spinous dorsal down to level with pectoral. Another similar parallel band from last dorsal spines and first dorsal rays. On flanks scales below lateral line between and inclusive of dark blotches, about 17, with vertical dark brown lines inclined little forward and following subterminally within each row of scales. Blackish blotch on

with others less distinct and terminally. Caudal with obscure dark blotches. Right side whitish, dark blotches of vertical fins less distinct than on left side.

India.

Apparently the specific name poorly chosen as its jaws are not short or small. Norman gives "maxillary scarcely reaching middle of eye, length 2 3/4 to nearly 3 in head; length of lower jaw more than twice in head". The figure shows maxillary about 2 1/4 in head measured from its front end. In my specimens the mandible is 1 2/3 to 1 3/4 in the total length of the head.

differs from Hesperus mata in the presence of a black blotch in the pectoral axil which shows below the base of the pectoral base.

4361. D. 5365. Cape Santiago Light, N. 73° W., 6.7 miles (lat. 13° 44' 24" N., long. 120° 45' 30" E.), Balayan Bay, Luzon. 9m 2¼ fathoms. February 22, 1909. Length 82 mm.

4367. D. 5157. Siniabta Island. (N.), S. 80° W., 3.30 miles (lat. 5° 1' 30" N., long. 119° 55' 50" E.), Sulu Archipelago. 9m 18 fathoms. February 21, 1908. Length 47 mm.

4361. D. 5365. Cape Santiago Light, S. 68° W., 5.4 miles (Lat. 13°48'30" N.; long. 120°43'45" E.), Balayan Bay, Luzon.

2023

Pseudorhombus moorei Thominot

Pseudorhombus moorei Thominot, Bull. Soc. Philomath. Paris, ser. 7, vol. 4, p. 175, 1880 (type locality: Melbourne). — McCulloch, Austral. Mus. Mem., 2 0.5, pt. 2, p. 280, Sep. 10, 1929 (reference).

2024

Pseudorhombus multimaculatus (Günther

Pseudorhombus multimaculatus (Günther, Cat. Fishes Brit. Mus., vol. 4, p. 427, 1862 (type locality: Habitat?). — Meyer, Anal. Soc. Esp. Hist. Nat., Madrid, vol. 14, p. 40, 1885 (north Celebes). — Mc Culloch, Austral. Mus. Mem., No. 5, pt. 2, p. 278, Sep. 10, 1929 (compiled)

Platessa sp. Jenyns, Zool. Voy. Beagle, vol. 3, p. 138, 1842 (King George's Sound).

Pseudorhombus multiradiatus Macleay, Proc. Linn. Soc. New South Wales, vol. 7, p. 13, 1883 (error; Port Jackson).

Pseudorhombus novae-cambriae Ogilby, Proc. Linn. Soc. New South Wales, vol. 23, p. 296, 1898 (type locality: Port Jackson); Mem. Queensland Mus., vol. 1, p. 43, 1912 (name).

Pseudorhombus neglectus Bleeker

Pseudorhombus neglectus Bleeker, Nederl. Tijds. Dierk., vol. 3, p. 44, 1866 (type locality: Macassar?, Celebes); Atlas Ichth. Ind. Néerl., vol. 6, p. 8, pl. (3) 234, fig. 1, 1866-72 (type).

— Weber, Siboga Exped., vol. 57, p. 424, 1913 (Madura Sea). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 111, 1929 (South China Sea, Rion Strait, Bankka, Java, Java Sea, Madura Straits, Makassar Strait). — Chevey, Inst. Océan. Indo Chine, 19e note, p. 27, Aug. 25, 1932 (Cochin China; Annam).

Paraphrys neglectus Evermann and Leal, Bull. Bur. Fisher., vol. 26, p. 105, 1906 (1907) (San Fabian).

2026

Pseudorhombus oligolepis (Bleeker)

Rhombus oligolepis Bleeker, Act. Soc. Sci. Ind. Néerl. (Jap.), vol. 5, p. 8, pl. 2, fig. 2, 1858–59 (type locality: Nagasaki).

Pseudorhombus oligolepis Günther, Cat. Fishes Brit. Mus., vol. 4, p. 430, 1862 (compiled). — Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 179, 1906 (compiled). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 316, 1913 (reference). — Seale, Philippine Journ. Sci., vol. 9, p. 78, 1914 (Hong Kong). — Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 116, 1920 (Tateyama, Bōshiu). — Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., vol. 2, p. 124, 1931 (Nagasaki); Bull. Acad. Sci. U. R. S. S., p. 118, 1931 (Nagasaki).

Paralichthys oligolepis Jordan and Snyder, Annot. Zool. Japon., vol. 13, p. 121, 1903 (reference).

Tarphops oligolepis Jordan and Thompson, Mem. Carnegie Inst., vol. 6, no. 4, p. 307, pl. 39, 1913 (Misaki).

— Jordan and Hubbs, Mem. Carnegie Inst., vol. 10, no. 2, p. 297, 1925 (Toba, Kobe, Tatokusu Island).

— Chu, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 91, Jan. 1931 (reference).

2028

Pseudorhombus pentophthalmus Günther

Pseudorhombus pentophthalmus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 428, 1862 (type locality: China). — Bleeker, Nederl. Tijds. Dierk., vol. 4, p. 130, 1873 (1874) (name). — Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 69, 1880 (Inland Sea of Japan). — Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 626, 1902 (1904) (Hakodate; Yokohama Bay). — Fowler and Bean, Proc. U. S. Nat. Mus., vol. 62, art. 2, p. 66, 1922 (Takao). — Reeves, Journ. Pan Pac. Res. Inst., vol. 2, no. 3, p. 14, July-Sep. 1927 (Canton). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1929, p. 615 (Hong Kong). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 114, 1929 (Kanglang Island). — Chu, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 90, Jan. 1931 (compiled).

-2029

Pseudorhombus russelli (not Gray) Otaki, Journ. Fisher. Bur. Tokyo, p. 6, 1897 (south east Japan).

Pseudorhombus oculifer Regan, Ann. Mag. Nat. Hist., ser. , vol. , p. 25, 1905 (type locality: Inland Sea of Japan).

—Jordan and Starks, Proc. U.S. Nat. Mus., vol. 31, p. 178, 1906 (Nagasaki, Tokyo, Kobe, Wakanoura, Mororan). —Snyder, Proc. U.S. Nat. Mus., vol. 42, p. 438, 1912 (Shimizu). —Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, p. 316, 1913 (reference). —Iguka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 116, 1920 (Amakusa). — Schmidt and Lindberg, Bull. Acad. Sci. U.R.S.S., p. 1147, 1930 (Tsuruga). — Schmidt, Bull. Acad. Sci. U.R.S.S., p. 118, 1931 (Nagasaki).

depth 1 9/10 to 2 1/4; head 3 1/8 to 3 1/3, width 4. Snout to lower orbit 4 to 4 1/3 in head from snout tip; lower orbit 4 1/3 to 4 3/5, subequal with snout, in advance 1/4 or opposite to upper orbit; maxillary reaches 1/3 to 1/2 ~~eye~~ lower orbit, expansion 2/3 in lower orbit, length 2 1/8 to 2 1/4 in head from snout tip; bony interorbital narrow trenchant keel, width 1/2 of pupil. Gill rakers 4 or 5 + 13 to 15, lanceolate, 1 to 2 in gill filaments, which 1/2 lower orbit.

Scales 58 to 70 in lateral line to caudal base and 5 more on latter; 22 above, 29 to 32 below. Scales with 12 to 18 basal radiating striae; 15 to 22 short

Hepatus mata (Cuvier ~~Desmarest~~).

Acanthurus mata Cuvier ~~Desmarest~~, Hist. Nat. Poiss., vol. 10, 1835, p. ~~446~~ 202 (in Russell, Fishes of Coromandel, vol. 1, 1803, p. 64, plate 84; Vizagapatam). Mariannes (young). — Day, Fishes of India, pt. 2, 1876, p. 205, plate 48, fig. 1 (Madras).

According to Day this species is uniform blackish brown, the lips and fins blacks. Klunzinger later placed it as a synonym of Chaetodon gahm Forskal. Day's example was 184 mm. and it was reported to him 456 mm.

apical denticles in 3 transverse series; circuli fine, less distinct apically. Right scales cycloid.

D. 63 to 73, fin height 2 3/4 in total head length; A. 47 to 53, fin height 1 1/2; caudal 1 1/3, cuneate behind; least depth of caudal peduncle 3; pectoral 1 7/8; ventral 2 3/5, followed by strong concealed spine.

Left side brown, with blackish blotch large as orbit at beginning of straight section of lateral line, followed by 3 rather obsolete and smaller blotches. Above lateral line 2 rows of ocelli, similarly below. Iris dark neutral gray. Vertical fins with dark blotches well

~~Teuthis obliquata~~ Mc Culloch, Mem. Queensland Mus., vol. 7, pt. 4, 1922, p. 243 (Capricorn Group).

Acanthurus eparai Lesson, Voy. Coquille, Zool., tome 2, pt. 1, 1831, p. 147, plate 27, fig. 1, Tahiti.

Acanthurus lumeralis Valenciennes, Hist. Nat. Poiss., vol. 10, 1835, p. 231 (170). Carolines, Tahiti. — Jenyns, Zool. Voy. Beagle, Fish, vol. 4, 1842, p. 76 (Tahiti). — Bleeker, Nat. Tijds. Ned. Indië, deel 3, 1850, p. (740) 762 (Macassar); deel 15, 1858, p. 200 (Goram). — Bleeker, Act. Soc. Sci. Ind. Neerl., vol. 1, no. 5, 1856, p. 6 (Amboina); vol. 5, no. 8, 1858–59, p. 2 (Manado, Celebes).

Harpurus particus Lichtenstein, Descript. Animal., 1845, p. 183, Tahiti.

spaced medially and terminally smaller ones. Pectoral pale, also left ventral with dark dots. Right side white, spots showing through obscurely on vertical fins mostly terminally.

East Indies, Philippines, China, Formosa, Japan.

20463. Catbalogan, Samar; April 15, 1908. Length 151 mm.

Hepatus obivaceus (Schneider).

Acanthurus nigricans obivaceus Schneider, Syst. Ichth. Bloch, 1801, pp. xxxviii, 214. Tahiti: (du Forster.)

Acanthurus obivaceus Günther, Cat. Fish. Brit. Mus., vol. 3, 1861, p. 336 (type; Fiji). — Bleeker, Verslag. Akad. Wet. Amsterdam, deel 15, 1863, p. 21 (Hitu, Amboina). — Günther, Journ. Mus. Godeffroy, band 4, 1875, p. 113 (East Indies, Society Islands, Samoa, Pelew Islands, Hawaiian Islands). — Sauvage, Hist. Nat. Madagascar, Poiss., 1891, p. 343 (as Acanthure à croissant Liénard, Suppl. rapp. Soc. Hist. nat. Maurice, 1836, p. 55). — Weber, Siboga Exped., band 52, 1913, p. 318 (Banda).

Hepatus obivaceus Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903 (1905), p. 385, fig. 166 (Honolulu). — Jordan and Richardson, Bull. Bur. Fisheries, vol. 27, 1907 (1908), p. 270 (Cagayancillo). — Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 510 (Okinawa). —

Pseudorhombus quinquocellatus Weber and Beaufort

Pseudorhombus quinquocellatus Weber and Beaufort, Fisher Indo Austral. Archip., vol. 5, p. 104, 1929 (type locality: Strait of Madura, 60 to 100 meters; near Kanglang Island).

2034

Pseudorhombus spinosus McCulloch

Pseudorhombus spinosus McCulloch, Biol. Res. Endeavour, vol. 2, pt. 3, p. 129, pl. 25, July 3, 1914 (type locality; Houtmans Abrolhos, Western Australia); Austral. Mus. Mem., No. 5, pt. 2, p. 279, Sep. 10, 1929 (reference).

2035—

Pseudorhombus tenuirastrum (Waite)

Paralichthys tenuirastrum Waite, Rec. Austral. Mus., No. 4, p. 121, pl. 28, text fig. 10, 1899 (type locality: Port Stephens to Port Hacking, New South Wales, 20 fathoms). — Ogilby, Mem. Queensland Mus., Vol. 1, p. 43, 1912 (name).

Pseudorhombus tenuirastrum McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 279, Sep. 10, 1929 (reference).

Pseudorhombus triocellatus (Schneider)

Pleuronectes triocellatus Schneider, Syst. Ichth. Bloch, p. 145, 1801 (type locality: Tranquebar).

Rhombus triocellatus Valenciennes, Règne Animal, Cuvier, ed. Ill., Poiss., p. 304, 1839( ).—Jerdon, Madras Journ. Lit. Sci., p. 147, 1851.—Bleeker, Verhand. Batavia. Genoot. (Bengal. Ind.), vol. 25, p. 76, 1853 (reference).—Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 1, no. 3, p. 283, 1889 (Bengal Bay).

Pseudorhombus triocellatus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 428, 1862 (no locality).—Kner, Reise Novara, Fische, p. 284, 1865 ("Tahiti", likely erroneous).—Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 9, pl. (8) 239, fig. 1, 1866-72 (Sumatra).—Day, Fishes of India, pt. 3, p. 424, pl. 92, fig. 1, 1877; Fauna

British India, vol. 2, p. 442, 1889.
— Jordan and Starks, Ann. Carnegie Mus., vol. 11, p. 459, 1917 (Ceylon).
— Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 11, April 1927 (Ceylon, Madras, Orissa, Puri, Ahlyab).
— Fowler, Mem. Bishop Mus., vol. 10, p. 93, 1928 (Kner's record).

Genus Taeniopsetta Gilbert

Taeniopsetta Gilbert, Bull. Bur. Fisher, vol. 23, pt. 2, p. 680, 1903 (1905). (Type Taeniopsetta radula Gilbert, virtually orthotypic.

Males with tenth or twelfth to fifteenth or eighteenth dorsal and first four or five anal rays produced. In females tenth to thirteenth or fourteenth dorsal and first to third or fourth anal rays produced. Females differ from males in orbital region less spinous, larger eye and shorter filamentous dorsal and anal rays.

2639

Taeniopsetta ocellatus (Günther)

Pseudorhombus ocellatus Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 56, pl. 24, 1 figs. A-B (type locality: outside Hares Harbor, Admiralty Islands, 152 fathoms). — Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 232, 1908 (Saya de Malha Banks, Indian Ocean).

Taeniopsetta ocellatus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 17, April 1927 (Saya de Malha Banks materials). — Fowler, Mem. Bishop Mus., vol. 10, p. 90, 1928 (part).

2040

Taeniopsetta radula Gilbert

Taeniopsetta radula Gilbert, Bull. U.S. Fish Comm., vol. 23, pt. 2, p. 680, fig. 266, 1903 (1905) (type locality: Pailolo Channel between Molokai and Maui, 128 to 13 fathoms; Laysan, 90 to 220 fathoms).

Taeniopsetta ocellatus (not Günther) Fowler, Mem. Bishop Mus., vol. 10, p. 90, 1928 (Hawaiian Islands).

Genus Arnoglossus Bleeker

Arnoglossus Bleeker, Versl. Med. Kon. Akad. Wet. Amsterdam, vol. 13, 1862, p. 427. (Type Pleuronectes arnoglossus Schneider, monotypic.)

Engyprosopon Günther, Cat. Fishes B. Lit. Mus., vol. 4, p. 431, 1864. (Type Rhombus mogkii Bleeker, monotypic.)

Anticitharus Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 47, 1880. (Type Anticitharus polyspilus Günther, monotypic.)

Scaeops Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 627, 1902 (1904). (Type Rhombus grandisquama Schlegel, orthotypic.)

Eyes on left side, close together. Mouth wide or small. Maxillary more than 1/3 of head. Teeth small, conic, unequal, uniserial or biserial in jaws, sometimes irregular canine like ones. Palate toothless. Gill membranes broadly joined below throat. Gill rakers short or long, lanceolate. Scales moderate or small, deciduous, usually ctenoid on colored side, cycloid on blind side. Lateral line well arched over pectoral. Dorsal begins on snout, front rays sometimes prolonged in males. Pectorals sometimes with filamentous rays in males. Right ventral lateral, with short base, begins behind origin of left ventral. Left ventral median, with long base forming prolongation of anal, but not united with same.

Arnoglossus arenicola (Jordan and Evermann)

Engyprosopon arenicola Jordan and Evermann, Bull. U. S. Fish Comm., vol. 22, p. 207, 1902 (1903) (type locality: Hilo, Hawaii); vol. 23, pt. 1, p. 515, fig. 62, 1903 (1905) (type). — Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 412, 1905 (1906) (name).

— Fowler, Mem. Bishop Mus., vol. 10, p. 92, 1928 (type).

Arnoglossus aspilos (Bleeker)

Rhombus aspilos Bleeker, Natuurk. Tijds. Ned. Indië, vol. 1, p. 408, 1850 (type locality: Batavia, Java).

Arnoglossus aspilus Günther, Cat. Fishes Brit. Mus., vol. 4, p. 417, 1862 (no locality); Rep. Voy. Challenger, vol. 1, pt. 6, p. 47, 1880 (Arafura Sea, 30 fathoms).

— Weber, Siboga Exped., vol. 57, p. 430, 1913 (Macassar; Liwung, Talibabu). —

Chevey, Inst. Océan. Indo Chine, 19e note, p. 27, Aug. 25, 1932 (Annam).

Arnoglossus aspilos Fowler, Mem. Bishop Mus., vol. 10, p. 89, 1928. (compiled).

Platophrys (Arnoglossus) aspilus Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 15, pl. (6) 237, fig. 2, 1866-72 (Java; Bali; Sumatra).

Bothus (Arnoglossus) aspilus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 132, 1929 (Pulu Weh; Malacca Strait; Banka Strait; Java Sea; Java; Madura; Celebes; Ambon; Lirung).

Rhombus irroratus (Van Hasselt) Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 15, 1866-72 (name) in synonymy.

Depth 2 1/4 to 2 2/5; head 4 to 4 1/5, width 4 1/6 to 4 3/4. Snout tip to lower orbit 4 1/2 to 5 in head from snout tip; lower orbit 4 to 4 1/5, greater than snout, 1/4 to 1/3 in advance of upper orbit; maxillary reacher to or 1/8 in lower orbit, expansion 3, length 2 2/3 to 3 in head from snout tip; interorbital very narrow, with slight groove. Gill rakers 4 + 8 or 9, lanceolate, equal gill filaments or 2 1/2 in lower orbit.

Scales 42 to 44 in lateral line to caudal base and 4 or 5 more on latter; 12 above, 12 or 13 below. Muzzle naked. Vertical

fins more or less with fine scales basally. Scales very caducous, most all fallen. Smith 34 to 36 close set parallel basal striae; 38 to 40 low uniform apical denticles; circuli very fine, continuous. Right scales cycloid. Arch of lateral line 4 2/5 to 5 in straight section to caudal base. Lateral line on both sides.

D. 80 to 82, fin height 1 2/5 to 1 1/2 in total head length; D. 60 or 61, fin height 1 2/5 to 1 3/5, preceded by short robust spine; caudal 3 3/5 to 4 in rest of fish, convex behind; least depth of caudal peduncle 2 1/5 to 2 1/4 in total head length; pectoral 1 3/5 to 1 3/4; ventral 1 2/3.

Left side ochraceous buff, becoming buff towards edges of body. Orbit gray. Vertical fins pale or light,

693 and 694. Tablayan, Mindoro. December 12, 1908. Length 100 to 103 mm.

4720. San Miguel Harbor, Tilao Island. April 21, 1908. Length 74 mm.

1179. Santa Cruz Island. April 24, 1908. Length 85 mm.

208. Tagnala Island. January 1, 1909. Length 89 mm.

591. Tara Island. December 15, 1908. Length 111 mm.

1165. Tataan, Simalue Island. February 19, 1908. Length 95 mm.

977 and 1064. Ligpo Point. January 1, 1908. Length 96 to 110 mm.

10447. Tilig, Lubang Island. July 14, 1908. Length 92 mm.

4738. Ulugan Bay, Palawan Island. December 28, 1908. Length 87 mm.

4762 and 4763. Ulugan Bay, north Oyster Inlet. December 28, 1908. Length 116 to 117 mm.

slightly grayish terminally. Right side whitish. Left paviele fins with some faint gray spots, right ones uniformly white.

East Indies, Malaya, Indo China.

1137. Alibijaban Island. March 6, 1909.
Length 128 mm.

4888. Alimango Bay, Burias Island.
March 5, 1909. Length 131 mm.

4845. Biri Channel. June 1, 1909.
Length 91 mm.

9669. Biri Channel, Burias Island.
June 2, 1909. Length 102 mm.

17059 and 17060. Binuccay Island,
near Cuyo. April 9, 1909. Length 108 & 114 mm.

3585. Caamahala Bay, Ragay Gulf.
March 11, 1909. Length 118 mm.

255 [1008] Caxidigan. December 29, 1909.
Length 105 mm. Black spots on scales
not roundish but continued into bars.
Light areas on lateral line rather
below lateral line, scarcely wider
than pupil; first entirely under, extends
from angle of gill opening near middle
of body; other behind first reaches

2047

D. 5461. Carrigo Island (W.), N. 12° W., 4, 9 miles (lat. 13°57'42" N., long. 123°06'42" E.), east coast of Luzon. In 11 fathoms. June 14, 1909. Length 53 to 87 mm. 28 examples.

Batav. Genoot. (Nat. Verh. Bengal), deel 25, 1853, p. 48.

Acanthurus bipunctatus Günther, Cat. Fish. Brit. Mus., vol. 3, 1861, p. 331. China and Fiji. — Elera, Cat. Faun. Filip., vol. 1, 1895, p. 532 (Luzon, Cavite).

Teuthis bipunctatus Jordan and Evermann, Proc. U. S. Nat. Mus., vol. 25, 1902, p. 358 (Kotosho). — Jordan and Fowler, Proc. U. S. Nat. Mus., vol. 25, 1902, p. 554 (Formosa, Miyakoshima, Riu Kiu).

Acronurus melanurus Günther, Cat. Fish. Brit. Mus., vol. 3, 1861, p. 346 (Borneo; larval). — Day, Fishes of Malabar, 1865, p. 127.

Acanthurus melas Valenciennes, Hist. Nat. Poiss., vol. 10, 1835, p. 241. Ceylon. — Bleeker, Verh. Batav. Genoot. (Nat. Verh. Bengal), deel 25, 1853, p. 48.

Hepatus gunthери Jenkins, Bull. U. S. F. Comm., vol. 22, 1902 (1903), p. 477. fig. 29. Honolulu.

2048

Arnoglossus bassensis Norman

Arnoglossus bassensis Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 246, fig. 6, June 15, 1926 (type locality: east coast Flinders Island, Bass Strait). — McCulloch, Austral. Mus. Mem., No. 5, vol. 2, p. 277, Sep. 10, 1929 (reference).

2049

Arnoglossus bleekeri Macleay

Arnoglossus bleekeri Macleay, Proc. Linn. Soc. New South Wales, vol. 6, pt. 1, p. 124, July 1881 (type locality: Endeavour River). — Mc Culloch, Austral. Mus. Mem., no. 5, pt. 2, p. 277, Sep. 10, 1929 (reference).

2050

Arnoglossus cocosensis (Bleeker)

Rhombus cocosensis Bleeker, Naturk. Tydsr. Nederl. Indië, vol. 8, p. 179, 1855 (type locality: Cocos-Keeling Islands, Indian Ocean).

Platophrys (Arnoglossus) cocosensis Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 13, pl. (14) & 35, fig. 1, 1866-72 (type).

Engyprosopon cocosensis Norman, Records Indian Mus., vol. 29, pt. 1, April 1927, p. 24 (Nicobars; Cape Negrais, Travancore).

Bothus (Arnoglossus) cocosensis Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 428, 1929 (Cocos Island).

Psianectes macrophthalmus (not (Alcock) Jenkins), Mem. Indian Mus., vol. 3, p. 27, 1910 (part).

Arnoglossus debilis (Gilbert)

Anticitharis debilis Gilbert, Bull. U.S. Fish Comm., vol. 23, pt. 2, p. 683, pl. 97, 1903 (1905) (type locality: Pailolo Channel between Molokai and Maui; off Molokai; 122 to 220 fathoms).—

Fowler, Mem. Bishop Mus., vol. 10, p. 90, 1928 (Hawaiian Islands; type).

Arnoglossus elongatus Weber

Arnoglossus elongatus Weber, Siboga Expedt., vol. 57, p. 431, fig. 79, 1913 (type locality: lat. 7°2'6 S., long. 115° 23'6 E., Madura Sea, 100 meters).

Bothus (Arnoglossus) elongatus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 4, p. 125, fig. 29, 1929 (type, Madura Strait; Bali?).

Arnoglossus filimanus (Regan)

Scaeops filimanus Regan, Trans. Linn. Soc. London, Zool. 2, vol. 12, Zool., pt. 3, p. 234, pl. 25, fig. 2, 1908 (type locality: Maldives, 27 to 44 fathoms).

Engyprosopon filimanus Norman, Records Indian Mus., vol. 29, pt 1, p. 27, April 1927 (types).

2054

Arnoglossus finsoni Ogilby

Arnoglossus finsoni Ogilby, Proc. Linn. Soc. New South Wales, vol. 23, pt. 3, p. 295, Dec. 9, 1898 (type locality: off Caloundra Head, Moreton Bay, Queensland).

—McCulloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 277, Sep. 10, 1929 (reference).

2053-

Arnoglossus grandisquama (Schlegel)

Rhombus grandisquama Schlegel, Fauna Japonica, Poiss., ptes. 10–14, p. 183, pl. 92, figs. 3–4, 1846 (type locality: Japan).

Rhomboidichthys grandisquama Günther, Cat. Fishes Brit. Mus., vol. 4, p. 437, 1862 (China; "Gulf of Fonseca"). — Ishikawa and Matsuura, Prelim. Cat. Fishes Mus. Tokyo, p. 25, 1897.

Platophrys (Platophrys) grandisquama Bleeker, Nederl. Tijdr. Dierk., vol. 4, p. 130, 1873 (1874) (China).

Platophrys grandisquama Gilchrist, Marine Investig. South Africa, vol. 4, p. 161, 1908 (Amatikulu River mouth, 26 fathoms).

Engyprosopon grandisquamis Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 122, 1901 (reference).

Engyprosopon grandisquama Norman, Biol. Res. Endeavour, vol. 5, p. 250, 1926

Records Ind. Mus., vol. 29, pt. 1, p. 25, fig. 5, April 1927 (Mekran; Arabian; Nicobars; Muscat; Gulf of Oman; Maldives; Galle, Ceylon).

Xenops grandisquama Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 627, 1902 (1904) (Owari Bay; Sagami Bay); Proc. U. S. Nat. Mus., vol. 31, p. 168, fig. 1, 1906 (Wakanoura; Nagasaki). —

Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 438, 1912 (Shimizu). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 313, fig. 262, 1913 (reference). —

Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 116, 1920 (Misaki). — Barnard, Ann. South African Mus., vol. 21, pt. 1, p. 387, June 1925.

—Reeves, Journ. Pan Pac. Res. Inst., vol. 2, no. 3, p. 14, July-Sep. 1927 (name). —Chu, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 90, Jan. 1, 1931 (reference). — Schmidt, Bull. Acad. Sci. U. R. S. S., p. 118, 1931 (Nagasaki).

Rhombus poeciluros Bleeker, Naturk. Tijds. Nederl. Indië, vol. 3, p. 293, 1852 (type locality: Amboina).

Pseudorhombus poeciluros Bleeker, Nederl. Tijds. Dierk., vol. 2, p. 274, 1865 (reference).

Platophrys (Arnoglossus) poeciluros Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 14, pl. (5) 236 fig. 1, 1866-72 (Bamba; Amboina).

Rhomboidichthys poeciluros Regan, Journ. Bombay Soc. Nat. Hist., vol. 16, no. 2, p. 332, 1905 (Muscat).

Scaeops poecilura Jordan and Seale, Proc. U. S. Nat. Mus., vol. 28, p. 803, 1905 (Negros). — Jordan and Richardson,

Bull. Bur. Sci. Manila, p. 54, 1910 (name).

Vaeops poecilurus Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, pt. 3, Zool., p. 233, 1908 (Suvadiva, Maldives, 33 to 34 fathoms). —

Weber, Siboga Exped., vol. 57, p. 429, 1913 (west of New Guinea; Valeyer; Sumbawa).

Bothus (Arnoglossus) poecilurus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 131, fig. 31, 1929 (Sumatra; Java Sea; south of New Guinea; Weber's materials).

Rhombodichthys spilurus Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 47 (53), pl. 21, fig. A, 1880 (type locality: South of New Guinea; Cebu Straits; Philippines). — Regan, Fauna Geog. Maldive and Laccadive Archip., Gardner, vol. 1, pt. 3, p. 277, 1902 (Suvadiva).

Arnoglossus spilurus Johnstone, Pearl Oyster Rep. Ceylon, vol. 2, Fishes, p. 211, 1904.

Scaeops spilura Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 412, 1905 (1906) (name). — Jordan and Richardson, Bull. Bur. Sci. Manila, p. 54, 1910 (name).

Rhomboidichthys spiniceps Macleay, Proc. Linn. Soc. New South Wales, vol. 6, pt. 1, p. 127, July 1881 (type locality: Port Jackson).

Rhomboidichthys valderostratus (not Alcock) Jenkins, Mem. Indian Mus., vol. 3, p. 26, 1910 (~~type locality~~ part).

(Scaeops)
Engyprosopon grandisquama (not Schlegel) McCulloch and Whitley, Rec. Austral. Mus., vol. 14, pt. 4, p. 343, fig. 1, 1925 (holotype of Rhomboidichthys spiniceps).
→ McCulloch, Austral. Mus. Mem., no. 5, pt. 2, p. 276, Sep. 10, 1929 (compiled).
Engyprosopon grandisquama

depth 2; head 3 3/4 to 4, width 3 7/8 to 4. Snout to lower orbit 4 3/5 to 4 3/4 in head from snout tip; lower orbit 3 2/3 to 4, greater than snout, greater than bony interorbital in females and subequal males; lower orbit 1/4 in advance of upper; interorbital concave. Gill rakers 0+7, lanceolate, 1 1/4 in gill filaments, which 2 1/5 in lower orbit.

~~Scales~~

maxillary reaches 1/5 to 1/4 in lower orbit, expansion 4 3/4 to 5, length 3 to 3 1/5 in head from snout tip;

Scales 40 to 42 in lateral line to caudal base and 4 or 5 more on latter; 12 above, 16 below.

Blackish - brown crescent along soft dorsal base and front of caudal peduncle, but not continued down on anal base; in young this blotch larger & front of soft dorsal. Along each lateral and lower edge of body scales, following rows, oblique dusky line, about 18 to 20 in number; these extend from base of spinous dorsal - and dark crescent of soft dorsal still little below level of pectoral. Iris dark brown. Brown band extends from near ends of last dorsal spines to bases of last soft rays, broadening little below, also 2 others, narrower extend more or less parallel in outer portion of same fin. Transverse dark band on last anal rays medially; also another at caudal base. Brownish subterminal band on caudal, edge of fin whitish and front of dark band with dark brown dividing line. Paired fins pale.

and Melanesia.

East Indies. This species is readily distinguished from Chaetodon lineolatus by its arrangement of the ocular band above which on predorsal is linear dark blotch medially. Also the dark crescent at the soft dorsal base is not continued on the anal base, the presence of 3 dark lines on the soft dorsal and a dark band at the caudal base are other features of distinction.

Front of muzzle and snout, including maxillary, naked. Row of small scales basally along each ray of vertical fins, though caudal more extensively scaly basally. Scales with 5 0 to 5 1/2 fine parallel radiating basal striae; 65 to 70 very short uniform apical denticles; circuli very fine, mostly continuous. Right scales cycloid. A lateral line on both sides, arch 3 3/4 in straight section to caudal base.

D. 8 3 to 8 6, fin height 1 7/8 to 2 1/10 in total head length; A. 60 to 63, fin height 2 to 2 1/8; caudal 1 1/8 to 1 1/4, convex behind; least depth of caudal peduncle 2 to 2 1/8; pectoral 1 1/5 to 1 1/3; ventral 1 2/7 to 1 3/4, followed by concealed spine.

depth 1 3/4 to 1 4/5; head 2 4/5, width 2 2/5 to 2 3/5. Snout 2 1/10 to 2 2/5 in head from snout tip; eye 3 1/4 to 4 2/5, 1 2/5 to 2 1/5 in snout, 1 1/2 to 1 5/7 in interorbital; maxillary reaches 2/3 in snout, 3 1/2 to 3 3/4 in head; interorbital 3 3/5 to 4, broadly convex. Gill rakers 3 + 10, short points, 4 1/2 in gill filaments, which 1 1/2 in eye.

Scales 25 to 28 between gill-opening and caudal base; tubes 24 to 27 in lateral line; 6 scales above lateral line, 14 or 15 below. Scales with 9 to 15 basal radiating striae, with age many as 6 incomplete auxiliaries; apical denticles 108 to 248, with 17 to 19 transverse series of basal elements; circuli fine.

D. XII, 23, I or 24, I, last spine 1 7/8 to 2 in total head length, twelfth ray 1 3/5 to 1 7/8; A. III, 19, I or 20, I, third spine 1 7/8 to 2 2/5, eleventh ray 1 2/3 to 1 7/8, least depth of caudal peduncle 3 to 3 1/3; caudal 1 2/5 to 1 1/2, hind edge nearly truncate or slightly convex; pectoral 1 1/5 to 1 1/3; ventral 1 1/5 to 1 2/5.

Dull brownish generally, paler below. Broad blackish-brown ocular band from interorbital, wide as eye in young and becoming broader with age, longer blackish-brown blotch on predorsal above recipit.

(scarcely narrowing on cheek.)

Burnt umber to vandyke
brown on left side, finely
mottled with very fine dots,
spots or specks of dark and
also innumerable pale to drab
fine markings, none of markings
pronounced. Vertical fins with
pale membranes, rays and scales
dotted or sprinkled with dark
specks, more extensive on caudal
as rays broader. Last also with
2 large conspicuous black
spots long as eye, each behind
middle of fin length and close
to upper and lower margin
respectively. Left ventral dark
specked on rays like anal.
Right ventral and pectoral
whitish rest of side, vertical
fins only showing grayish terminally.

Chaetodon oxycephalus Bleeker.

Chaetodon oxycephalus Bleeker, Nat. Tijds. Ned. Indië, deel 4, 1853, p. (596) 603. Ternate.

Tetragonoptrus (Oxychaetodon) lineolatus (part) Bleeker, Atlas Ichth. Ind. Neerl., vol. 9, 1877, p. 51 (Ternate).

Chaetodon lineolatus (part) Ahl, Arch. Naturges., band 89, abth. A, heft 5, 1923, p. 167 (New Pommerania, Talassia, New Guinea).

2 large caudal spots in distinct.
Left pectoral with rays finely
dotted with blackish.

Arabia, East Africa, South
Africa, Maldives, Nicobars, Ceylon,
Burma, East Indies, Philippines,
China, Japan, New South Wales.

In Norman's outline figure
of Engyprosopon grandisquama
the 2 black marginal caudal
spots are shown before the middle
in the length of the fin, a
condition I have not seen in
any specimen.

43932 U.S.N.M. Mauritius.
Colonel Nicholas Pike. Length 173
mm.
51064 U.S.N.M. Hawaii.
1901. Length 123 mm.
52718 U.S.N.M. Hawaii.
1901. Length 224 mm.
65453 U.S.N.M. Rikitea. Albatross
Collection. Length 227 mm.

2064

4408. D. 5181. Antonia Island (S.), S. 63° W., 6.60 miles (lat. 11° 36' 40" N., long. 123° 26' 35" E.), off eastern Pinang. Dn 26 fathoms. March 27, 1908. Length 83 mm.

20733. Balayan Bay, Taal. January 19, 1908. Length 80 mm.

4400. D. 5134. Balukbaluk Island (N.) S. 59° W., 6.25 miles (lat. 6° 44' 45" N., long. 121° 48' E.), Sulu Archipelago (Dn 25 fath.)

10040. D. 5304. China Sea, vicinity of Hong Kong (lat. 21° 46' N., long. 114° 47' E.). Dn 34 fathoms. August 9, 1908. Length 30 mm.

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→

3248.

3247, D. 5360. Corregidor Light, N. 74° W., 6.9 miles (lat. 14° 21' N., long. 120° 41' E.), Manila Bay. Dn 12 fathoms. February 7, 1909. Length 52 to ~~88~~ 97 mm. ~~8~~ 10 examples.

4408. D. 5181. Antonia Island (S.), S. 63° W., 6.60 miles (lat. 11° 36' 40" N., long. 123° 26' 35" E.), off eastern Pinang. Dn 26 fathoms. March 27, 1908. Length 83 mm.

20733. Balayan Bay, Taal. January 19, 1908. Length 80 mm.

4400. D. 5134. Balukbaluk Island (N.) S. 59° W., 6.25 miles (lat. 6° 44' 45" N., long. 121° 48' E.), Sulu Archipelago. Dn 25 fathoms. February 7, 1908. Length 30 mm.

21755. Cebu, Cebu market. March 28, 1909. Length 85 mm.

→

3248.
3247. D. 5360. Corregidor Light, N. 74° W., 6.9 miles (lat. 14° 21' N., long. 120° 41' E.), Manila Bay. Dn 12 fathoms. February 7, 1909. Length 52 to ~~97~~ mm. ~~11~~ 10 examples.

2065

1 example. Davao, Mindanao; May 16, 1908. Length 73 mm.

19409. Iloilo market, Panay. March 28, 1908. Length 60 mm.

2372, 2373. D. 5131. Island off Panabutan Point, N. 20° E., 0.40 mile. In 27 fathoms. February 6, 1908. Length 73 mm. 60 to

D. 5641. Kalono Point (W.), N. 61° W., 3.4 miles (lat. 4° 29' 24" S., long. 122° 52' 30" E.), Buton Strait. In 39 fathoms. December 14, 1909. Length 65 mm.

2066

D. 5640. Labuan Blanda Island, N. 88° E., 1 mile (lat. 4° 27' S., long. 122° 55' 40" E.), Buton Strait. In 24 fathoms. December 13, 1909. Length 57 or 58 mm. 2 examples. These examples largely with more contrasted color pattern, chiefly as large blotches of dark or black brown over left side of fish.

19505. Ragay, Ragay Gulf, Luzon. March 10, 1909. Length 45 to 51 mm. 3 examples.

20015. Sangley Point, Cavites, Luzon. March 23, 1908. Length 78 mm.

20894, 20895. Santiago River, Mariveles, Luzon. January 29, 1909. Length 54 to 87 mm.

(For Carl Benjamin Klunzinger, best known for his work on the fishes of the Red Sea, also an excellent paper on the Müller collection of Australian fishes in the Stuttgart Museum, published in 1880.)

2067

8315 ~~Arbacia nigra~~. Subig Bay, Luzon. 2 examples.
January 7, 1908. Length 78 mm. (1
example. Tilig, Lubang. July
14, 1908. Length 70 mm.

4365, 4366. D. 5157. Tinakta
Island (N.), S. 80° W., 3.30 miles
(lat. 5° 12' 30" N., long. 119° 55' 50" E.),
Sulu Archipelago. In 18 fathoms.
February 21, 1908. Length 45 to
61 mm. 2 examples.

20553. Tilig, Lubang. July 14, 1908.
Length 68 mm.

Hepatus dorensis (Valenciennes).
Acanthurus dorensis Valenciennes, Hist.
Nat. Poiss., tome 10, 1835, p. 220 Hist. Doreh
Harbor, New-Guinea. — Günther, Cat.
Fish. Brit. Mus., vol. 3, 1861, p. 332
(copied).

Valenciennes gives but 20 anal rays.
Brown with hind caudal edge whitish,
and pectoral yellowish above. Length
200 mm.

Arnoglossus hawaiiensis (Jordan and Evermann)

Engyprosopon hawaiiensis Jordan and Evermann, Bull. U. S. Fish Comm., vol. 22, p. 207, 1902 (1903) (type locality: Hilo, Hawaii); vol. 23, pt. 1, p. 514, fig. 227, 1903 (1905) (type). — Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 687, 1903 (1905) (off Maui, 10 to 14 fathoms). — Jordan and Seale, Bull. Bur. Fisheries, vol. 25, p. 412, 1905 (1906) (name). — Fowler, Copeia, No. 112, p. 84, Nov. 20, 1922 (Hawaii); Mem. Bishop Mus., vol. 10, p. 92, 1928 (Maui; type).

Arnoglossus intermedius (Bleeker)

Platophrys (Arnoglossus) intermedius Bleeker, Nederl. Tijdschr. Dierk., vol. 3, p. 47, 1866 (type locality: Menado, Celebes); Atlas Ichth. Ind. Néerl., vol. 6, p. 14, pl. (1) 232, fig. 1, 1866-72 (type).

Rhomboidichthys intermedius Regan, Fauna Geog. Maldive Laccadive Arch., Gardner, vol. 1, p. 277, 1903 (Suvadiva; Felidu).

Engyprosopon intermedius Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, pt. 3, Zool., p. 235, 1908 (Suvadiva; Diego Garcia; Seychelles; 10 to 44 fathoms).

Arnoglossus intermedius Norman, Biol. Res. Endeavour, vol. 5, p. 248, 1926 (Records Ind. Mus., vol. 29, pt. 1, p. 21, pl. 4, April 1927 (Seychelles; Maldives). — Fowler, Mem. Bishop

Mus., vol. 10, p. 90, 1928 (Shortland Island, Solomons). — McCulloch, Austrial. Mus. ~~Novit.~~, No. 5, pt. 2, p. 277, Sep. 10, 1929 (reference).

Bothus (Arnoglossus) intermedius Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 130, 1929 (Java Sea; Weber's material), p. 428 (reference).

Anticitharus annulatus Weber, Siboga Exped., vol. 57, p. 433, pl. 11, fig. 5, 1913 (type locality: Djampeah; Timor Sea).

Arnoglossus annulatus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 19, April 1927 (Nankauri Harbor, Nicobars).

depth 1 4/5 to 2; head 3 1/3 to 3 2/5, width 3 to 3 1/2. Snout tip to lower orbit 4 1/4 to 4 1/2 in head from snout tip; lower orbit 2 7/8 to 3, greatly exceeds snout, 1/2 in advance of upper; maxillary reaches to front edge of lower orbit or 1/5 in lower orbit, expansion 3 1/2 to 4 in lower orbit, length 2 3/4 to 2 7/8 in head from snout tip; interorbital width 1 4/5 to 3 in lower orbit, rather deeply and evenly concave. Gill rakers 0 + 7, lanceolate, 1/2 of gill filaments, which 2 4/5 in lower orbit.

Scales 40 to 43 in lateral line to caudal base and 5 or 6 more on latter; 12 or 13 above, 12 or 13 below. Caudal scaly basally, dorsal and anal medial rays each with row of fine scales from base. Scales with 47 to 50 close parallel basal striae, outermost little divergent; 30 to 33 short nearly uniform apical denticles; circuli very fine, continuous. ~~Lateral~~ Scales

cycloid on blind side, Lateral line on both sides, or as inconspicuous pores on right side; arch anteriorly on left side 2 2/3 to 3 1/8 in straight section to caudal base.

D. 80 to 83, fin height 2 1/4 to 2 1/3 in total head length; A. 57 to 60, fin height 3 to 3 3/4; caudal 1 1/3 to 1 3/5, convex behind; least depth of caudal peduncle 2 4/5 to 3; pectoral 2 1/8 to 2 3/5 in combined head and body to caudal base, upper ray ending in long filament; ventral 1 2/5 to 1 3/4 in total head length.

Pale brown generally on left side, inclining to buff marginally on body and more or less obscurely variegated with darker brown. Orbits dark neutral gray. Fins brownish, rays speckled with dusky. Right side whitish, vertical fins with only indistinct brownish or darker dots.

Laccadives, Maldives, Seychelles, Nicobars, East Indies, Australia, Melanesia. As my examples are all small, none show the first dorsal ray nearly so prolonged as in Norman's figure. Their type of coloration, is however, with traces of spots much as he shows. The males with elongated pectorals also show about 4 large dark cross blotches.

4398, D. 5134. Balukbaluk Island (N.) S. 59° W., 6.25 miles (lat. 6° 44' 45" N., long. 121° 48' E.), Sulu Archipelago. 3 m 25 fathoms. February 7, 1908. Length 59 to 60 mm.

4415. D. 5099. Corregidor Light, N. 36° E., 4.80 miles (latt. 14° 18' 55" N., long. 120° 31' 20" E.), China Sea off Southern Luzon. 3 m 30 fathoms. January 2, 1908. Length 50 mm.

4424. D. 5144. Jolo Light, S. 50° W., 3.40 miles (lat. 6° 05' 50" N., long. 121° 02' 15" E.), vicinity of Jolo. 3 m 19 fathoms. February 15, 1908. Length 53 mm.

D. 5400. Tanguingui Island Light, N. 77° W., 22.5 miles (lat. 11° 24' 24" N., long. 124° 05' 30" E.), north of Cebu. March 16, 1909. In 25 fathoms. Length 44 mm.

D. 5401. Tanguingui Island Light, N. 79° W., 23 miles (lat. 11° 24' 45" N., long. 124° 06' E.), north of Cebu. In 30 fathoms. March 16, 1909. Length 38 to 51 mm. 2 examples.

83274 U.S.N.M. No locality. Length
Wilkes Exploring Expedition.
172 mm.

52743 U.S.N.M. Hawaiian Islands.
Bureau of Fisheries.

55485 U.S.N.M. Honolulu. Dr. O.P.
Jenkins. 3 examples.

2076

Arnoglossus japonicus Hubbs

Arnoglossus japonicus Hubbs, Proc. U. S. Nat. Mus., vol. 48, p. 454, pl. 25, fig. 2, 1915 (type locality: Vincennes Strait, south of Kiusiu, Japan; Suruga Gulf; off east coast of Hondo).

Arnoglossus kobensis (Jordan and Starks)

Scaeops kobensis Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 170, fig. 2, 1906 (type locality: Kobe). — Jordan, Tanaka, Snyder, Journ. College Sci., vol. 33, p. 312, fig. 261, 1913 (copied). — Izuka and Matsuura, Cat. Zool. Spec. Tokyo Mus., Vertebr., p. 116, 1920 (Enoura, Suruga).

Engyprosopon kobense Tanaka, Journ. Fac. Sci. Univ. Tokyo, sect. 4, Zool., vol. 3, pt. 1, p. 38, Nov. 4, 1931 (name).

2978

Arnoglossus latifrons (Regan)

Scaeops latifrons Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 233, pl. 25, fig. 3, 1908 (type locality: Maldives; Seychelles; Saya de Malha Banks; Cargados Carajos).

Engyprosopon latifrons Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 27, April 1927 (Regan's material).

Arnoglossus macrolepis (Regan)

Scaeops macrolepis Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 233, pl. 27, fig. 4, 1908 (type locality: Cargador Carajos, 20 to 30 fathoms).

Engyprosopon macrolepis Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 27, April 1927 (type).

2050

Arnoglossus maculipinnis new species

Bothidae

8948. Between Paracan and Jesus Points, Albay Gulf, Luzon. June 21, 1909. Length 190 mm.

A1139. Kayoa Island. November 29, 1909. Length 179 mm.

342. Makeri Island. April 5, 1909. Length 145 mm.

8882. Near Palag Bay, Luzon. June 16, 1909. Length 195 mm.

736, 9225, 9226. Opol, Mindanao. August 4, 1909. Length 97 & 194 mm.

1164. Tataan, Sinalua Island. February 19, 1908. Length 105 mm.

1 example. Philippines. Length 203 mm.

A1503. Berau River Island, Borneo. December 31, 1909. Length 160 to 172 mm. 2 examples.

A1373. Bara Island, Celebes. December 17, 1909. Length 166 mm.

A914, A942, A943, A944. Dodepo and Pasejogok Islands. November 16, 1909. Length 171 to 178 mm.

Depth 1 7/8 to 2; head 3 3/4, width 2 3/4 to 3. Snout tip to lower ~~eye~~ orbit 4 1/3 to 4 2/3 in head from snout tip; ~~head~~ lower orbit 3, much greater than snout, 2/5 to 1/2 in advance of upper orbit; maxillary reaches 1/5 in lower orbit, expansion 3 1/2 to 3 3/4, length 2 3/4 to 2 4/5 in head from snout tip; interorbital across bony width 3 1/3 to 4, concave. Gill rakers 6+9, lanceolate, 1 1/4 in gill filaments, which 1 4/5 in lower orbit.

Scales 39 or 40 in lateral line to caudal base and 4 or 5 more on latter; 11 above, 14 below. Snout, maxillary and front of mandible more or less naked. Interorbital closely scaled.

depth 1 1/2 to 1 2/3; head 2 2/3 to 2 3/4, width 2 1/3 to 2 2/5. Snout 2 1/5 to 2 1/2 in head; eye 3 to 4 1/3, 1 1/8 to 1 3/8 in snout, little greater than interorbital in young to 1 1/10 with age; maxillary 1/2 to 3/5 in snout, 3 1/5 to 3 1/4 in head; interorbital 3 to 4, broadly convex. Gill rakers 3 + 12, short points, 1/5 of gill filaments, which 1 3/5 in eye.

Scales 28 to 30 between gill-opening and caudal base; tubes 24 or 25 in lateral line; 6 scales above lateral line, 13 to 15 below. Scales with 8 to 13 basal radiating striae; apical denticles 88 to 160; with 10 to 14 series of transverse basal elements; circuli fine.

D. XII, 24, I or 25, I, last spine 1 3/5 to 2 1/6 in head, sixteenth soft ray 1 2/3 to 2; A. III, 19, I to 21, I, third spine

dorsal and anal medially with small scales basally, also caudal finely scaly basally. Scales with 65 to 70 fine close set radiating basal striae; row of 40 to 45 short uniform apical denticles; circuli fine, complete. Lateral line on both sides, anterior arch 3 1/8 to 3 1/4 in straight section to caudal base.

D. 83 to 85, fin height 1 2/3 to 1 3/4; A. 58 or 59, fin height 1 2/3 to 1 4/5; caudal 1, convex behind; least depth of caudal peduncle 2 1/10 to 2 1/4; pectoral 2 3/4 to 3 1/4 in combined head and body to caudal base; left ventral 2 2/5 to 2 1/2.

Left side pale clay color, mottled or clouded indistinctly

Hist., vol. 42, 1912, p. 510 (Okinawa).
— Ahl, Arch. Naturges., band 89, abth. A,
Heft 5, 1923, p. 171 (Jaluit, Samoa).
Chaetodon dizoster Valenciennes, Hist. Nat.
Poiss., vol. 7, 1831, p. 396. Mauritius. —
Valenciennes, Regne Animal Cuvier, Poiss.,
Ill., 1839, plate 39, fig. 2. — Günther, Cat.
Fish. Brit. Mus., vol. 2, 1860, p. 17 (copied).
Chaetodon aurora de Vis, Proc. Linn. Soc.
New South Wales, vol. 9, 1885, p. 453. Queensland
Coast.
Chaetodon ulietensis var. confluens Ahl,
l. c., p. 172. South Sea.

with darker, also with scattered
ill defined variable though
mostly obscure whitish spots.
Iris grayish, or brown
neutral gray. Fins pale,
vertical ones with obscure brown
spots. Left pectoral pale, with
3 or 4 brown cross bars, first
basal.

Diagnosis. Close to Arnoglossus
filimanus (Regan) and A.
macrolepis (Regan), but differing
from these as from all the species
of the genus in its coloration.
This is the presence of 2 obscure
though distinctly darker brown
spots on the caudal - about basal
⅓ to ½ of fin and so spaced as
to form or mark caudal fin
transversely in thirds. Also traces

vol. 2, 1889, p. 4. — Jatyow and Kenty, Abhand. Senckenberg. Nat. Ges., bund 21, heft 1, 1897, p. 502 (Zanzibar). — Evermann and Seale, Bull. Bur. Fisheries, vol. 26, 1906, p. 96 (Bacon). — Lihl, Arch. Naturges., bund 89, abth. A, heft 5, 1923, p. 170 (Lyke; Mozambique; Mikamidami). — Fowler and Ball, ~~Bradley~~ Bishop Mus. Bull., no. 26, 1925 (1926), p. 18 (Wake Island).

Pomacentrus falcula Lacépède, Hist. Nat. Poiss., vol. 4, 1802, pp. 506, 511, 513.

Tetragmoptrus (Apechaetodon) falcula Bleeker, Atlas Ichth. Ind. Neerl., vol. 9, 1877, p. 52, plate (11) 373, fig. 1 (Batu, Ternate, Amboina).

Chaetodon ulietensis Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 39 (30), Ulietea. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 18 (copied). — Kaup, Arch. Naturges., abth. 1, 1860, p. 152 (Ulietea). — Snyder, Proc. U. S. Nat.

of other obscure dark spots terminally. It is, however, chiefly in the dark transverse bars on the pectoral that the species may be known, first and largest at basal third.

~~Type~~ U. S. N. M., no. , type.

4399. D. 5134. Balukbaluk Island (N.), S. 59° W., 6.25 miles (lat. 6° 44' 45" N., long. 121° 48' E.), Sulu Archipelago. In 25 fathoms. February 7, 1908. Length 89 mm. Paratype.

4327. D. 5140. Jolo Light, S. 33° W., 6.10 miles (lat. 6° 08' 45" N., long. 121° 03' E.), vicinity of Jolo. In 20 to 76 fathoms. February 14, 1908. Length 101 mm. Type.

Chaetodon fulcula Bloch.

Chaetodon fulcula Bloch, Naturg. Ausl. Fisch., band 7, 1793, p. 102, plate 325, fig. 2. No locality (Collection John). L.c., band 9, 1795, p. 104, plate 405, fig. 2. (no locality). — Schneider, Syst. Ichth. Bloch, 1801, p. 225 (Tranquebar). — Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 44 (copied). — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 17 (copied). — Kaup, Arch. Naturges., abth. 1, 1860, p. 151 (Coromandel, Mozambique). — Playfair, Fishes of Zanzibar, 1866, p. 33 (Zanzibar). — Capello, Journ. Soc. Lisboa, 1871, p. 199 (Mozambique). — Günther, Journ. Mus. Godeffroy, band 2–3, 5–6), 1874, p. 39, plate 27, fig. e (Samoa, Society Islands, Hawaii, Samoa, Kingsmills). — Day, Fishes of India, pt. 1, 1875, p. 104, plate 26, fig. 5 (Nicobars). — Day, Faun. British India,

4601. D. 5480. Jacbuc Point (Leyte), S. 87° W., 17.3 miles (lat. 10°44'36" N., long. 125°1&9' E.), between Samar and Leyte. In 62 fathoms. July 29, 1909. Length 40 to 65 mm. 2 examples.

2086

— Arnoglossus maldivensis (Regan)

Scaeops maldivensis Regan, Trans. Linn. Soc. London, vol. 12, Zool., p. 234, pl. 25, fig. 1, 1908 (type locality: Maldives, 27 to 44 fathoms).

Engyprosopon maldivensis Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 27, April 1927 (types).

Arnoglossus malhensis Regan

Arnoglossus malhensis Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, pt. 3, Zool., p. 235, pl. 26, fig. 2, 1908 (type locality: Saya de Malha Banks, over 123 fathoms). — Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 21, April 1927 (type).

Arnoglossus microstoma (Weber)

Platophrys microstoma Weber, Siboga Exped., vol. 57, p. 427, pl. 7, fig. 3, 1913 (type locality: Jedan Island of Aru Islands, 13 meters).

Bothus (Arnoglossus) microstoma Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 126, 1929 (type).

Bothus microstoma Chevey, Inst. Océan. Indo Chine, 19e note, p. 27, Aug. 25, 1932 (Annam; Cochin China; Poulo-Condore).

Arnoglossus muelleri (Klunzinger)

Pseudorhombus muelleri Klunzinger, Archiv Naturges., vol. 38, pt. 1, p. 40, 1872 (type locality: Hobson's Bay, Victoria).

Pseudorhombus muelleri Klunzinger, Sitz. Ber. Akad. Wiss. Wien, math.-nat. Kl., vol. 80, pt. 1, p. 407, pl. 9, fig. 2, 1879 (types).

Paralichthys müllerii Waite, Rec. Austral. Mus., vol. 6, pt. 2, p. 73, 1902 (between Fremantle and Houtman's Abrolhos).

Arnoglossus muelleri Mc Culloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 277, Sep. 10, 1929 (compiled).

Arnoglossus mogkii (Bleeker)

Rhombus mogkii Bleeker, Natuurk. Tijds. Nederl. Indië, vol. 7, p. 256, 1854 (type locality: Manado, Celebes).

Rhomboidichthys mogkii Günther, Cat. Fishes Brit. Mus., vol. 4, p. 438, 1862 (no locality).

Pseudorhombus mogki Bleeker, Nederl. Tijds. Dierk., vol. 1, p. 230, 1863 (Ternate).

Platophrys (Arnoglossus) mogki Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 14, pl. (2) 233, fig. 1, 1866–72 (Singapore; Bali; Celebes; Ternate; Buru; Amboina; Ceram).

Engyprosopon mongkei Weber, Siboga Expéd., vol. 57, p. 429, 1913 (Kawa, Ceram).

Engyprosopon mogkii Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 27, pl. 5, April 1927 (lat. 7° N., long. 76° E., 102 to 105 fathoms; Indian Archipelago).

Bothus (Arnoglossus) mogkii Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 128, fig. 30, 1929 (Pulau Weh; Weber's materials); p. 428 (reference).

depth 1 3/4 to 1 7/8; head 3 3/4 to 3 7/8, width 3 to 3 1/5. Snout to lower orbit 4 1/5 to 5 in head from snout tip; lower orbit 3 3/5 to 3 4/5, greatly exceeds snout, 1/4 to 1/3 in advance of upper orbit; maxillary reaches to or 1/5 in lower orbit, narrow, length 3 to 3 1/5 in head from snout tip; interorbital 2 1/2 to 3 1/3 in lower orbit, concave, scaly. Gill rakers 0 + 7, lanceolate, 1 1/4 in gill filaments, which 1 4/5 in lower orbit.

Scales 47 to 49 in lateral line to caudal base and 4 or 5 more on latter; 16 above, 20 below. Caudal base well scaled and most of dorsal and anal rays each with row of small scales from base. Scales with 27 to 100 fine basal more or less parallel striae, diverging above and below; 20 to 30 rather short slender uniform apical denticles; circuli very fine. Scales ctenoid on left side, cycloid on right side. Lateral line on both sides, anterior arch 4 2/5 to 4 3/5 in straight section to caudal base.

D. 80 to 84, fin height 2 to 2 1/6 in total head length; A. 61 to 63, fin height 1 7/8 to 2; caudal 1 to 1 1/8, convex behind; least depth of caudal peduncle 1 7/8 to 2 1/4; pectoral 1 2/5 to 1 2/3; ventral 1 1/3 to 1 2/5.

Variably brown to dark or neutral brown on left side, finely mottled or speckled with deeper dusky brown. Along straight section of lateral line 5 or 6 blackish variable blotches or spots, frequently obscured. Mottled coloring of body also extended on fin rays. Orbits slate or neutral black. Right side whitish, fins grayish.

Malaya, East Indies, Philippines.

2094

12 examples. Abuyog, Leyte. July 26, 1909. Length 53 to 70 mm.

9 examples. Batangas market. June 7, 1908. Length 34 to 72 mm.

29 examples. Below mouth of Mindanao River, Cotabato, Mindanao. May 20, 1908. Length 33 to 71 mm.

1 example. Davao, Mindanao. May 16, 1908. Length 39 mm.

6 examples. Guijulugan, Negros. April 2, 1908. Length 29 to 68 mm.

21 examples. Hinunangan beach, Leyte. July 30, 1909. Length 46 to 64 mm.

5239 to 5241. Malabang, Mindanao. May 21, 1908. Length 91 to 103 mm.

↓

→ 5 examples. Mansalay, Mindoro. June 4, 1908. Length 44 to 58 mm.

4 examples. Luzon shore, San Vicente harbor, November 13, 1908. Length 26 to 50 mm.

2094

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1 example. Davao, Mindanao. May 16, 1908. Length 39 mm.

6 examples. Guijulugan, Negros. April 2, 1908. Length 29 to 68 mm.

21 examples. Hamingan beach, Leyte. July 30, 1909. Length 46 to 64 mm.

~~9~~ 28 examples. Lagoon shore San Vicente harbor. November 13, 1908. Length 39 to 57 mm.

5 examples. Mansalay, Mindoro. June 4, 1908. Length 44 to 58 mm.

4 examples. Luzon shore, San Vicente harbor. November 13, 1908. Length 26 to 50 mm.

30533 U.S.N.M. New Guinea. Australian Museum. Length 150 mm.

30608 and 30611 U.S.N.M. New Guinea. Australian Museum. Length 100 to 157 mm. 2 examples.

43900 U.S.N.M. Mauritius. Colonel Nicholas Pike. Length 90 to 165 mm. 15 examples.

47789 U.S.N.M. Port Jackson. Australian Museum. Length 160 mm.

47817 U.S.N.M. Port Jackson. Australian Museum. Length 162 mm.

52506 U.S.N.M. Yaquina. Bureau of Fisheries. Length 83 to 155 mm. 4 examples.

51137 U.S.N.M. Hawaii. 1901. Length 117 mm.

55006 U.S.N.M. Puako Bay, Hawaii. Albatross Collection. Length 140 mm.

55007 and 55008 U.S.N.M. Hawaii. Albatross Collection. Length 122 to 158 mm. 3 examples.

2095

17 examples. Mantaquin Bay, Palawan. April 1, 1909. Length 35 to 58 mm.

6 examples. Mantaquin Bay. April 2, 1909. Length 45 to 60 mm.

22015.
~~2 examples~~. Marivéles Bay, Luzon. January 27, 1909. Length 46 to 54 mm.
~~3 examples~~.

4 examples. Hasugbu, Luzon. January 16, 1908. Length 40 to 54 mm.

1 example. Near mouth Tayabas River. February 25, 1909. Length 38 mm.

1 examples. Nogar Point, Panay. February 4, 1908. Length 72 mm.

2 examples. Panabutan Bay, Mindanao. February 5, 1906. Length 38 mm.

84436.
~~2 examples~~ Port Jamelo, Luzon. July 13, 1908. Length 52 to 57 mm. 2 examples.

6 examples. Port San Vicente. November 18, 1908. Length 35 to 48 mm.

20014. Sangley Point, Cavite, Luzon. March 23, 1908. Length 65 mm.

1359, 52681, 55342 U.S.N.M. Honolulu, Albatross Collection. Length 103 to 473mm. 7 examples.

50791 U.S.N.M. Southern Japan. Imperial University Japan. Length 118 mm.

52743 U.S.N.M. Hawaii. Bureau of Fisheries. Length 320 mm. As Hepatus xanthopterus.

82957 U.S.N.M. Hawaii. Wilkes Exploring Expedition. Length 43 to 57 mm. 2 examples.

2096

11 examples. Subig Bay, Olingapao. January 7, 1908. Length 41 to 74 mm.

2 examples. Tilig, Lubang. July 14, 1908. Length 43 to 79 mm.

4 examples. Verde del Sur Island, Palawan. April 6, 1909. Length 47 to 60 mm.

20504. Santa Maria, Siquijor Island. August 11, 1909. Length 98 mm.

Anal like dorsal, with broad blue borders and orange and yellow-shades less distinct; trace of blue basal stripe. Caudal purplish, front edges of lobes yellowish. Caudal spine dirty white, rocket blue about borders. Pectoral like dorsal. internally, more purple on lower portion externally. Ventral rays bluish or purplish, membranes yellowish.

(7807 and 7808.) Ground color gray with purplish shades. Yellowish about eye not meeting opposite side in front of eye. Dorsal and anal like body, extreme margin nearly black, with broad band submarginally of yellowish

Arnoglossus polyspilus (Günther)

Anticitharus polyspilus Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 48, pl. 22, fig. A, 1880 (type locality: Ki Islands, 129 fathoms). — Weber, Siboga Exped., vol. 57, p. 433, 1913 (Timor Sea).

Pseudorhombus polyspilus Jordan and Seale, Bull. Bur. Fisher., vol. 26, p. 45, 1906 (1907) (Cavite). — Jordan and Richardson, Bull. Bur. Sci. Manila, p. 54, 1910 (name).

Bothus (Anticitharus) polyspilus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 124, 1929 (type; south Java; Kei Islands; Timor Sea material), p. 428 (reference).

Arnoglossus polyspilus Norman, Records Indian Mus., vol. 29, pt. 1, p. 20, April 1927 (Mergui Archipelago, 65 fathoms).

Arnoglossus profundus Weber

Arnoglossus profundus Weber, Siboga Exped., vol. 57, p. 430, pl. 6, fig. 3, 1913 (type locality: lat. 7°2.6'S., long. 115° 23.6'E., Madura Sea, 100 meters; lat. 9°0.3'S., long. 126°24.5'E., Timor Sea, 112 meters).

Bothus (Arnoglossus) profundus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 127, 1929 (Weber's materials; Madura Strait; Java Sea; south coast of Java).

Arnoglossus sechellensis (Regan)

Scaeops sechellensis Regan, Trans. Linn. Soc. London, ser. 2, Zool., vol. 12, pt. 3, p. 234, pl. 27, fig. 5, 1908 (type locality: Seychelles, 37 fathoms).

Engyprosopon sechellensis Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 27, April 1927 (type).

Arnoglossus tapeinosoma (Bleeker)

Platophrys (Arnoglossus) tapeinosoma Bleeker, Nederl. Tijds. Dierk., vol. 3, p. 49, 1866 (type locality: Padang, Sumatra); Atlas Ichth. Ind. Nérl., vol. 6, p. 13, pl. (4) 235, fig. 4, 1866-72 (type); Nederl. Tijds. Dierk., vol. 4, p. 116 (130), 1873 (1874) (China).

Arnoglossus tapeinosoma Reeves, Journ. Pan Pac. Res. Inst., vol. 2, no. 3, p. 14, July - Sep. 1927 (Hong Kong). — Chu, Biol. Bull. St John's Univ., no. 1, p. 90, Jan. 1931 (reference).

Bothus (Arnoglossus) tapeinosoma Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 127, 1929 (Malacca Strait; Java Sea; Saleyer; Waigiou).

Arnoglossus macrolophus Alcock

Arnoglossus macrolophus Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, p. 280, pl. 18, fig. 2, 1889 (type locality: Five miles south of Ganjam in 25 fathoms); Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 433, 1890. Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 237, 1896.; Illustrat. Zool. Investigator, pt. 5, pl. 23, fig. 3, 1898 (type). — Johnstone, Pearl Oyster Rep. Ceylon, No. 2, p. 211, 1904 (Ceylon). — Norman, p. 21, fig. 3, Rec. Indian Mus., vol. 29, pt. 1, April 1927 (North end of Persian Gulf; Bengal Bay; Ganjam; south of Ganjam; Persian Gulf; Andamans; Tenasserim; Galle, Ceylon). — Fowler, Mem. Bishop Mus., vol. 10, p. 90, 1928 (compiled).

depth 2 3/5 to 2 3/4; head 3 1/4 to 3 3/5, width 4 1/5 to 4 2/5. Snout to lower orbit 3 3/4 to 4 1/8 in head from snout tip; lower orbit 3 1/8 to 3 3/5, greater than snout, 1/4 to 2/5 in advance of upper; maxillary reaches 1/5 to 1/4 in lower orbit, expansion 3 to 3 1/3 in lower orbit, length 2 1/5 to 2 1/4 in head from snout tip; interorbital as rather elevated bony keel. Gill rakers 6 + 12, lanceolate, equal gill filaments or 1/3 of lower orbit.

Scales 42 to 45 in lateral line to caudal base and 4 or 5 more on latter; 12 or 13 above, 12 or 13 below. Caudal base scaly. Scales very caducous, apparently not present on dorsal and anal. Scales with 28 to 30 parallel basal radiating striae; 27 to 29 short slender apical denticles; circuli fine, continuous. Scales of left side ctenoid, cycloid on right side. Lateral line with anterior arch 3 1/2 to 4 1/2 in straight section to

lateral line.

D. 9 o to 9 5, fin height 2 to 2 1/5 in total head, anterior 6 rays sometimes greatly prolonged or 1 2/3 in combined head and body to caudal base; A. 6 8 to 7 1, fin height 1 4/5 to 2 2/5 in total head length; caudal 1 1/3 to 1 2/5, convex behind; least depth of caudal peduncle 2 4/5 to 3; pectoral 1 1/3 to 1 3/5; ventral 1 4/5 to 1 5/6.

Left side brown, usually paler toward body edges. Row of obscure dark blotches along upper and lower body edges. Dark blotch at hind end of arch of lateral line and often 1 or 2 more less prominent on straight part of lateral line. Orbits dark gray. Vertical fins pale, with gray or brownish specks terminally on rays and often large prominent black spot on dorsal and anal basally and well posterior. Pectoral with brownish spots and

conspicuous black subterminal blotch. Right side whitish, vertical fins little speckled terminally with 2 blackish posterior spots usually distinct. Both ventrals more or less blackish terminally.

Persian Gulf, India, Ceylon, Andamans, Burma, Malaya, East Indies, China.

2105

1971, 1973. [682, 683] D. 5310. China Sea, vicinity of Hong Kong (lat. 21° 33' N., long. 116° 13' E.). In 100 fathoms, November 4, 1908. Length 65 to 82 mm. 2 examples.

1335. D. 5311. China Sea, vicinity of Hong Kong (lat. 21° 33' N., long. 116° 15' E.). In 88 fathoms. November 4, 1908. Length 68 mm.

2375. D. 5131. Island of Panabutan Point, N. 20° E., 0.40 mile. In 27 fathoms. February 6, 1908. Length 37 mm.

4541. D. 5593. Mount Putri (sea tangent) Borneo, N. 52° W., 17.2 miles (lat. 4° 2' 40" N., long. 118° 11' 20" E.). In 38 fathoms. September 29, 1909. Length 49 mm.

no. 8, 1858–59, p. 12 (Tobariri, Celebes); vol. 8 (Sumatra), 1859, p. 12 (Benculen). — Günther, Cat. Fish. Brit. Mus., vol. 3, 1861, p. 330 (Amboina, Pinang, Fiji). — Day, Fishes of Malabar, 1865, p. 126. — Kner, Reise, Novara Fische, 1866, p. 210 (Pujnipet and Madras). — Playfair, Fishes of Zanzibar, 1866, p. 56 (Aden and Zanzibar). — Playfair, Proc. Zool. Soc. London, 1867, p. 858, fig. (head of old example). — Peters, Monatsb. Akad. Wiss. Berlin, 1876, p. 439 (Mauritius). — Day, Fishes of India, pt. 2, 1876, p. 205 (Madras). — Günther, Philos. Trans. Roy. Soc. London, vol. 168, 1879, p. 470 (Rodrigues). — Steindachner and Doderlein, Denksc. Akad. Wiss. Wien, band 48, ab. 1, 1884, p. 37 (Ashmia). — Meyer, Ann. Soc. Espan. Hist. Nat. Madrid, vol. 14, 1885, p. 24 (North Celebes, Macassar; Tabukan, Nangi; Cebu). — Day, Fauna British India, vol. 2, 1889, p. 141. — Pfeffer, Jahrb. Hamburg. Wiss. Anstalt.,

3648. 2106

D. 5442. San Fernando Point Light, N. 39° E., 8.4 miles (lat. 16° 30' 36" N., long. 120° 11' 06" E.), west coast of Luzon. In 45 fathoms. May 11, 1909. Length 35 to 84 mm. 35 examples.

55009 U.S.N.M. Honolulu. Albatross Collection. Length 117 to 160 mm. 4 examples.

55114 U.S.N.M. Laysan Island. April 2-3, 1902. Length 145 mm.

55380 U.S.N.M. Honolulu. Albatross Collection. Length 125 mm.

56984 U.S.N.M. Pago Pago, Samoa. Bureau of Fisheries. Length 80 to 155 mm. 3 examples.

66083 U.S.N.M. Jaluit, Marshalls. Albatross Collection. Length 145 mm.

72213 U.S.N.M. Tuga Island, Philippines. R.C. McGregor. Length 72 mm.

75564 U.S.N.M. Honolulu. E.L. Berndt Length 120 mm.

82817 U.S.N.M. Hawaiian Islands. Wilkes Exploring Expedition. Length 60 mm.

82945 U.S.N.M. Samoa? Wilkes Exploring Expedition. Length 125 mm.

Arnoglossus tenuis Günther

Arnoglossus tenuis Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 55, 1880 (type locality: Hong Kong). — Jordan and Seale, Proc. U. S. Nat. Mus., vol. 29, p. 528, 1906 (Hong Kong). — Reeves, Journ. Pan Pac. Res. Inst., vol. 2, no. 3, p. 14, July-Sep. 1927 (Hong Kong). — Chu, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 90, Jan. 1931 (reference).

(not located)

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Arnoglossus ii Tanaka

Engyprosopon ii Tanaka, Journ. Fac. Sci. Univ. Tokyo, sect. 4, Zool., vol. 3, pt. 1, p. 38, Nov. 4, 1931 (name).

Arnoglossus violaceus Franz

Arnoglossus violaceus Franz, Abhand. Kon. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 61, pl. 7, fig. 56, 1910 (type locality: Aburatsubo). —

Jordan, Tanaka, Snyder, Journ. College Sci., vol. 33, p. 315, 1913 (copied).

2110

Arnoglossus wakiyai Schmidt

Arnoglossus wakiyai Schmidt, Comptes Rend. Acad. Sci. U. R. S. S., p. 313, 1931 (type locality: Fusan, Korea).

Arnoglossus waitei Norman

Arnoglossus waitei Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 241, fig. 4, June 15, 1926 (type locality: Great Sandy Strait, Queensland).

— Mc Culloch, Austral. Mus. Mem., no. 5, pt. 2, p. 277, Sep. 10, 1929 (reference).

Arnoglossus xenandrus (Gilbert)

Engyprosopon xenandrus Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 687, fig. 270, 1903 (1905) (type locality: off Molokai; Pailolo Channel; Auau Channel; Laysan; off Maui; Kauai; 30 to 176 fathoms).

Scaeops xenandrus Jordan and Seale, Bull. Bur. Fisheries, vol. 25, p. 412, 1905 (1906) (name). — Fowler, Mem. Bishop Mus., vol. 10, p. 92, 1928 (Hawaii).

Arnoglossus xystrias (Hubbs)

Engyprosopon xystrias Hubbs, Proc. U. S. Nat. Mus., vol. 48, p. 457, pl. 25, fig. 3, 1915 (type locality: Vincennes Strait, Japan, 83 fathoms). — Tanaka, Journ. Fac. Sci. Univ. Tokyo, sect. 4, Zool., vol. 3, pt. 1, p. 38, Nov. 4, 1931 (name).

Genus Crossolepis Norman

Crossolepis Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 22, 1927. (Type Arnoglossus brevirictis Alcock, orthotypic.)

Body sinistral. Eyes close together, separated by narrow ridge, lower eye little advanced. Mouth rather small. Teeth small, pointed, uniserial in both jaws. Palate toothless. Interorbital alike in both sexes. Gill membranes united. Upper angle of gill opening midway between beginning of lateral line and pectoral fin origin. Scales moderate, strongly ciliated on ocular side, cycloid on right or blind side. Scaling of head and body continuous below lateral line. Lateral line only on left or colored side, with strong arch anteriorly. Dorsal begins in advance of eyes, rays simple scaly on ocular side. Left ventral median, base long, right ventral lateral, base shorter.

Crossolepis brevirictis (Alcock)

Arnoglossus brevirictis Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 433, 1890 (type locality: Ganjam Coast, Bengal Bay, 30 fathoms); Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 327, 1896 ( ); Illustrat. Zool. Investigator, pt. 1, pl. 22, fig. 4, 1898 (type). Weber, Siboga Exped., vol. 57, p. 432, 1913 (Manado, Celebes, 55 meters).

Crossolepis brevirictis Norman, Rec. Indian Mus., vol. 29, pt. 1, April 1927 (Ganjam; Madras; Travancore; 20 to 75 fathoms). p. 123, fig. 4,

Bothus (Arnoglossus) brevirictis Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 129, 1929 (Weber's material).

depth 2 1/5 to 2 1/4; head 4, width 3 7/8 to 4 1/2. Snout to lower orbit 4 to 4 1/2 in head from snout tip; lower orbit 3 1/2 to 4, little greater than snout, 1/8 to 1/4 in advance of upper orbit; maxillary reaches 1/8 to 1/5 in lower orbit, expansion 2 3/4 to 3, length 3 to 3 1/4 in head from snout tip; interorbital narrow, barely 1/3 of pupil. Gill rakers 3 + 8, lanceolate, 3/4 of gill filaments which 1 4/5 in lower orbit.

Scales 46 or 47 in lateral line to caudal base and 5 more on latter; 1 1/2 above, 11 below. Vertical fins with small scales basally. Muzzle, including

880. Tataan, Pinatuc Island.
July 17, 1908. Length 135 mm.

237. Ulugan Bay, Palawan Island.
December 29, 1908. Length 135 mm.

473. Dodepo and Pasajogo Islands,
Celebes. November 16, 1909. Length 122 mm.

4687 and 4693. Apra Bay, Guam.
November 19-20, 1907. Length 87 to 104 mm.

52452 U. S. N. M. Apia, Samoa. Bureau
of Fisheries. Length 92 to 130 mm. 3 examples.

55959 U. S. N. M. Bacon, Philippines.
Bureau of Fisheries. Length 125 mm.
[3369.]

65797 U. S. N. M. Makemo. Albatross
Collection 1899. Length 128 to 133 mm.
4 examples.

71666 U. S. N. M. Naha, Okinawa.
Albatross Collection 1906. Length 168 mm.

maxillary, naked. Scales with 35 or 36 close set basal radiating striae; row of short uniform apical denticles 28 to 30; circuli fine, continuous. Scales all very caducous, cycloid on right side. Lateral line only on left side, arch 4 2/5 to 4 4/5 in straight section to caudal base.

D. 80 to 82, fin height 1 1/2 to 1 3/5 in total head length; A. 64 or 65, fin height 1 3/5 to 1 4/5, preceded by short spine; caudal 1 1/10 to 1 1/8, convex behind; ~~pectoral~~ least depth of caudal peduncle 2 to 2 2/5; pectoral 1 1/3 to 2; ventral 1 7/8 to 2.

Left side largely uniform russet, where scales have fallen edges of pockets narrowly

393 and 3601. Near Palaq Bay, Luzon.
June 16, 1909. Length 120 to 125 mm.

600. Paron Point, Albany Gulf, Luzon.
June 21, 1909. Length 142 mm.

4723. Pilas Island. September 12, 1909.
Length 135 mm.

1191. Port Dupon. March 17, 1909.
Length 116 mm.

527 and 711. Port Galera. June 7, 1908.
Length 135 to 163 mm.

407, 408, 440. Port Galapag. June 3, 1909.
Length 92 to 110 mm.

197. Simalac Island. September 22, 1909.
Length 152 mm.

A614. Tingaan Island. September 21, 1909.
Length 162 mm.

5-86. Tipadan Island. September 28, 1909.
Length 125 mm.

806. Tara Island. December 15, 1908.
Length 128 mm. [794]

and inconspicuously blackish. Orbits neutral gray. Fins all pale brownish, vertical ones slightly darker terminally. Pectorals pale. Right side whitish.

South eastern India, East Indies.

43607, 43606, 4309. D. 5182. Antonia Island (S.), N., 43° W., 3.70 miles (lat. 11°30'40" N., long. 123°23'20" E.), off eastern Panay. In 24 fathoms. March 27, 1908. Length 61 to 76 mm.

4268. D. 5209. Paratara Island (N.), S. 53° W., 1.80 miles (lat. 11° 45'25" N., long. 124°48'05" E.), off western Samar. In 20 to 26 fathoms. April 14, 1908. Length 68 mm.

Chaetodon triangulum Cuvier.

Chaetodon triangulum (Kuhl and Van Hasselt) Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 44. Batavia. — Meyer, Ann. Soc. Espan. Hist. Nat. Madrid, vol. 14, 1885, p. 16 (North Celebes; Mysore). — Alcock, Journ. Asiat. Soc. Bengal, vol. 65, pt. 2, 1896, p. 312 (Andamans). — Steindachner, Sitzbsb. Senckenberg. Gesell., band 25, 1900, p. 420 (Ternate). — Weber, Siboga Exped., band 65, 1913, p. 308 (Banda). — Kihl. Arch. Naturges., band 89, abth. A, heft 05, 1923, p. 174 (Padang, Siboga).

Citharoedus triangulum Kaup, Arch. Naturges., band 28, abth. 1, 1860, p. 143 (Java, Africa).

Tetragonoptrus (Gnochaetodon) triangulum Bleeker, Atlas Ichth. Ind. Neerl., vol. 9, 1877, p. 53, plate (12) 374, fig. 1 (Sumatra,

Genus Lophonectes Günther

Lophonectes Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 28, 1880. (Type Lophonectes gallus Günther, monotypic.)

Lophorhombus Macleay, Proc. Linn. Soc. New South Wales, vol. 7, pt. 1, p. 14, May 23, 1883. (Type Lophorhombus cristatus Macleay, monotypic.)

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Lophonectes gallus Günther

Lophonectes gallus Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 28, pl. 15, fig. B, 1880 (type locality: off Port Jackson, 30 fathoms). — Ogilby, Mem. Queensland Mus., vol. 1, p. 49, 1912 (Moreton Bay). — Mc Culloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 278, Sep. 10, 1929 (compiled).

Lophorhombus cristatus Macleay, Proc. Linn. Soc. New South Wales, vol. 7, pt. 1, p. 14, May 23, 1883 (type locality: Port Jackson).

Genus Bothus Rafinesque

Bothus Rafinesque, Car. Nuov. Anim. Sicilia, p. 23, 1810. (Type Bothus rumola Rafinesque = Pleuronectes rhombus Linnaeus, designated by Jordan and Gilbert, Proc. U.S. Nat. Mus., vol. 5, 1882 (1883), p. 576.)

Solea Catesby, Hist. Nat. Carolina, ed. 2, p. 27, 1771. (Species non-binomial. Type Pleuronectes lunatus Linnaeus, designated by Jordan and Evermann, Genera of Fishes, pt. 1, p. 31, 1917.)

Peloria Cocco, Lettera del Prof. Anastasio Cocco al Signor Augusto Krohn (Intorno ad a nuovi Pesci del mare di Messina), p. 21, 1844. (Type Peloria podas Cocco, monotypic.) (Pelorus Montfort 1808 not involved.)

Platophrys Swainson, Nat. Hist. Animals, vol. 2, p. 302, 1839. (Type Rhombus ocellatus Agassiz, monotypic.)

Coccolus Bonaparte, in Cocco, Lettera del Prof. Anastasio Cocco al Signor Augusto Krohn (Intorno ad a nuovi Pesci del mare di Messina), p. 21, 1844. (Type Coccolus annectens Cocco.)

Rhomboidichthys Bleeker, Act. Soc. Sci. Ind. Néerl. (Banda Macass.), vol. 1, p. 67, 1856. (Type Rhombus myriaster Schlegel, monotypic.)

Trichopsetta Gill, Proc. U. S. Nat. Mus., vol. , p. 601, 1888. (Type Citharichthys ventralis Goode and Bean, orthotypic.)

Psettylis Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 436, 1890. (Type

Perissias Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 3, p. 2667, 1898. (Type Platophrys taeniopterus Gilbert, monotypic.)

Pseudocitharichthys Weber, Siboga Exped., vol. 57, p. 413, 1913. (Type Citharichthys aureus Day, monotypic.)

Grammatobothus Norman, Biol. Res. Endeavour, vol. 5, pt. 5, p. 253, June 15, 1926. (Type Platophrys polyophthalmus Bleeker.)

Clemmeti'dae

Bothus brunneus new species

Depth 2 4/5 to 3; head 3 1/2 to 4, width 4 to 4 2/3. Snout to lower orbit 4 to 4 1/2 in head from snout tip, which sometimes protruding; lower orbit 3 1/3 to 3 2/3, greater than snout, 1/4 to 1/3 in advance of upper orbit; maxillary reaches 1/2 to 2/3 in lower orbit, expansion 2 3/4 to 2 4/5, length 2 1/5 to 2 1/4 in head from snout tip; interorbital narrow bony transverse keel, width 1/3 of pupil. Gill rakers 0 + 8 or 9, lanceolate, 1/2 of gill filaments, which 2 1/2 in lower orbit.

Scales 73 to 80 in lateral line to caudal base and 6 or 7 more on latter; 15 or 16 above,

bbb. No black blotch below juncture of dorsals.

mm. Black ocellus, little larger than eye at front of caudal peduncle; anal spines 4 or 5. plebeius

nnn. No black band on caudal peduncle; anal spines 3. decoratus

jjj. No black blotch on back or on caudal peduncle.

n. Each scale on trunk and tail with black spot. semeion

nnn. Scales with out black spots.

o. Dorsal spines 15; soft dorsal and anal and body between brownish black; 6 oblique dark stripes descend forward; fins colorless. blackburni

oo. Dorsal spines 12; vertical fins with white edges and dark submarginal lines.

22 or 23 below. Snout and maxillary naked, mandible with small scales. dorsal and anal naked or only very few small inconspicuous rows of scales on anterior rays basally. Caudal largely with fine scales. Arch of lateral line 4 4/5 to 5 2/5 in straight section to caudal base; no right lateral line. Scales with 40 to 45 basal radiating striae; 0 to 32 irregular short slender apical denticles; circuli very fine, continuous. Right scales cycloid.

D. 106 to 110, fin height 2 in total head length; A. 86 to 88, fin height 1 7/8 to 2; caudal 1 2/7 to 1 2/5, cuneate behind; least depth of caudal peduncle 3 1/5 to

ll. No dark vertical line behind or parallel with dark ocular band.

hh. Body without transverse broad black bands.

i. Two blue lines curve down from ~~front of~~ shoulder to front of anal; black blue edged ocellus on back below junction of dorsals. bennetti

ii. No blue lines from shoulder to anal.

j. Black blotch on back or on caudal peduncle.

kk. Black blotch, greatly larger than eye, on back below juncture of dorsals.

ll. No black blotch on caudal peduncle; anal spines 3. spectrum

lll. Caudal peduncle with black blotch; anal spines 4. maculiceps

3 1/4; left pectoral 1 1/2 to 1 9/10; right pectoral 2 2/3 to 2 4/5; left ventral 1 7/8 to 2; right ventral 2 2/5 to 2 2/3, followed by strong spine.

Left side nearly uniform brown, exposed pockets of most of fallen scales dark brown, without markings. Orbits neutral gray. Fins brownish. Right side whitish, fins somewhat grayish.

Philippines. Some small examples show diffuse obscure dark spots on the dorsal. Often left ventral with large blackish blotch posteriorly.

Diagnosis. Known by its increased scales of 83 to 87 in the lateral line, character of scales ctenoid on left side, long slender body and increased dorsal and anal rays, besides the largely uniform

bb. Rabdophorus. 1 spinous dorsal nearly twice length of soft fin, spines 12 to 16.

c. Dark or black ocular band present.

d. Posteriorly dark line parallel with ocular band from front of spinous dorsal vertically down on head or front of side, usually narrower than ocular band.

e. No large white bordered black blotch on back embracing soft dorsal; dorsal rays 20 to 23.

f. Dorsal and anal each with broad black basal band, former also with 2 narrower longitudinal dark bands; caudal with black transverse band; anal rays 18 to 21. trifasciatus

ff. Vertical fins black, edged white; anal rays 22 to 28. melanopterus

ff. Large white bordered black blotch on back posteriorly embraces soft dorsal; dorsal rays 23 to 26. ephippium

brown coloration, only variegated 2127
occasionally by the large black
blotch on the left ventral.
(Brunneus, brown.)

1975. D. 5310. Lat. 21°33'N., long. 116°
13'E., China Sea, vicinity Hong Kong.
9 m 100 fathoms. November 4, 1908.
Length 88 mm.

2491, 2493. D. 5273. Corregidor
Light, N. 27°E., 27.25 miles (lat. 13°
58'45"N., long. 120°21'35"E.), China
Sea, vicinity southern Luzon. 9 m
114 fathoms. July 14, 1908. Length
128 to 151 mm. 2 examples.

1862.
1861, D. 5255. Dumalag Island
(S), S. 65°W., 4.5 miles (lat. 7°03'
N., Long. 125°39'E.), Gulf of Davao.
9 m 100 fathoms. May 18, 1908.
to 172
Length 86 mm. 2 examples.

Analysis of the species.

I. Rows of body scales on lower portion of body disposed obliquely outward, horizontal or downward, often an indication of their upward disposition, not to angle of 45°; dorsal spines 10 to 16; anal spines 3 to 5.

a. Body ovoid; scales regularly rounded; scale rows of lower half of body horizontal or but slightly inclined upward posteriorly.

b. Citharoedus. Spinous dorsal but slightly longer than soft fin, spines 12; soft dorsal and anal obtusely rounded; scales 5-5; front profile of head very obtuse.

c. Head 3 1/4 to 3 3/5; sharply defined black longitudinal bands, narrower than interspaces, median recurved and those on soft dorsal and anal semilunar. meyeri

c². Head 3 to 3 1/4; dark longitudinal diffuse bands, broader than interspaces and all but slightly curved. ornatissimus

1917. D.5417. Lauis Point Light, N. 10° E., 3.5 miles (lat. 10°10' N., long. 123°53'15" E.), between Cebu and Bohol. 9m 165 fathoms. March 25, 1909. Length 119 mm.

3330. D.5418. Lauis Point Light, N. 16° E., 5.6 miles (lat. 10°8'50" N., long. 123°52'30" E.), between Cebu and Bohol. 9m 159 fathoms. March 25, 1909. Length 143 mm.

4172, 4173. D.5411. Lauis Point Light, N. 35° E., 4.7 miles (lat. 10°10' 30" N., long. 123°51'15" E.), between Cebu and Bohol. 9m 145 fathoms. March 23, 1909. Length 151 to 159 mm. 2 examples.

3969. D.5412. Lauis Point Light, N. 21° E., 5.5 miles (lat. 10°9'15" N., long. 123°52' E.), between Cebu and Bohol. 9m 162 fathoms. March 23, 1909. Length 151 mm.

which brown band suffused over entire anal base. Caudal gray, with narrow dark brown basal band. Length 47 mm. (Gilbert.)

We have examined the following examples of unidentifiable Tholichthys stage:

1 example. Robuck Island. September 29, 1909. Length 20 mm. (D. 5588.)

1 example. Pogas Point. February 5, 1908. Length 20 mm. (D. 5129.)

In the arrangement of the species we have largely followed ~~the~~ Ahl.

~~Arrangement of~~

4052, 4056, 4059. D.5453. Legaspi Light, S. 58° W., 4.5 miles (lat. 13°12' N., long. 123°49'18" E.), east coast Luzon. In 146 fathoms. June 7, 1909. Length 171 to 190 mm. 3 examples.

3378, 4054. D.5454. Legaspi Light, S. 64° W., 5.7 miles (lat. 13°12' N., long. 123°50'30" E.), east coast of Luzon. In 153 fathoms. June 7, 1909. Length 160 to 191 mm. 2 examples.

1426, 1427, 1429, 1430. D.5121 Malabrigo Light, N. 14° W., 9 miles (lat. 13°27'20" N., long. 121°17'45" E.), east coast Mindoro. In 108 fathoms. February 2, 1908. Length 108 to 139 mm.

2084. D.5117. Sombrero Island S. 17° E., 10.80 miles (lat. 13°52'22" N., long. 120°46'22" E.), Balayan Bay and Verde Island Passage. In 118 fathoms. January 21, 1908. Length 174 mm.

occasionally filamentous. Anal like 2nd dorsal, with 3 or 4 strong spines. Caudal fan shaped.

A large genus of beautiful reef fishes of the tropical seas, most living in the coral reefs of the Indo Pacific. They are extremely active and glide through the water with the greatest of ease, often quickly flashing their brilliant bodies.

The following based on a young example is hardly identifiable:

Chaetodon aphrodite Ogilby, Trans. Australian Inst., vol. 2, 1889, p. 55; plate 3, fig. 2. Lord Howe Island.

Black ocular bar. White blotch below spinous dorsal front. Whitish vertical band from base of 2nd dorsal anteriorly to middle of tail. Large oval black spot between 6 & 16 dorsal rays, below

2996. D.5376. Tayabas Light (outer), N. 53° W., 18.7 miles (lat. 13° 42'50" N., long. 121°51'30" E.), Marinduque Island and vicinity. In 90 fathoms. March 3, 1909. Length 103 mm.

1776 to 1778. D.5243. Ulanivan Island (N.), S. ~~66°~~ E., ~~3.10~~ miles (lat. 6°~~5~~0'55" N., long. 126°14'35" E.), Pujada Bay and vicinity. In 218 fathoms. May 15, 1908. Length 115 to 130 mm.

4373. D.5244. Ulanivan Island (N.), S. 52°30' E., 4 miles (lat. 6° 52'05" N., long. 126°14'15" E.), Pujada Bay and vicinity. In 171 fathoms. May 15, 1908. Length 125 mm.

Chaetodon bellifrinis Macleay, monotypic.

Body short, deep, very strongly compressed, especially above and behind. Caudal pedunde short. Head small, compressed. Mouth very small, terminal. Jaws with long, slender, flexible, bristle like teeth. Vomer sometimes with teeth. Preopercle entire or nearly so, without spine. Gill openings rather narrow, membranes narrowly joined to isthmus. Branchiostegals 6. Head almost entirely scaly. Trunk with rather large ctenoid scales, somewhat irregularly arranged. Lateral line curved, high, parallel with back. Dorsal fin single, continuous, not notched, spinous part longer than soft. Dorsal spines about 13, not graduated, some of middle ones longer than last. Last soft dorsal rays usually rapidly shortened, some

Bothus conferitus new species
depth 2 3/5; head 3 7/8, width 4 1/4.
Snout to lower orbit 4 1/4 in head
from snout tip; lower orbit 3 1/2,
greater than snout, 1/3 advanced
from larger upper orbit, which
close to upper profile and 3 1/8
in head from snout tip; maxillary
reaches 1/6 in lower orbit, expansion
4 in lower orbit, length 2 2/3 in
head from snout tip; bony interorbital
narrow groove, width 1/3 lower
orbit. Gill rakers 0+8, slenderly
lanceolate, equal gill filaments,
which 2 3/4 in lower orbit.

Scales 86 in lateral line to
caudal base and 7 more on latter;
32 above, 30 below. Maxillary and
muzzle naked. Each dorsal and
anal ray with row of fine scales,

Linophora Kaup, l.c., p. 155. Type Chaetodon
.aurriga Linnaeus, designated by Bleeker,
l.c., p. 306.

Sarothrodus Gill, Proc. Acad. Nat. Sci.
Phila., 1862, p. 238. Type Chaetodon striatus
Linnaeus, virtually as Sarothrodus Gill
proposed to replace Chaetodon Linnaeus.

Etcira Kaup, l.c., p. 147. Type Chaetodon
triangularis Rüppell, designated by Jordan,
Genera of Fishes, pt. 3, 1919, p. 297.

Megaprotodon Guichenot, Rev. Zool., 1848,
p. 12. Type Chaetodon bifasciatus Cuvier,
monotypic.

Tholichthys Günther, Ann. Mag. Nat. Hist.
London, vol. 1, ~~series~~ 1), 1868, p. 457. Type
Tholichthys ossens Günther, monotypic.
(Larval.)

~~Hemi~~chaetodon Bleeker, Arch. Neerl. Sci.
Nat. Harlem, vol. 11, 1876, p. 305. Type
Chaetodon capistratus Bloch, orthotypic.

2 rows on each caudal ray. Arch of lateral line 3 7/8 in straight section to caudal base. Left scales with 25 to 27 basal radiating striae; row of 15 to 23 slender apical denticles; circuli fine, complete, to abrupt apical end. Right scales all cycloid. No lateral line on right side.

D. 1/13, fin height 2 1/3 in total head length; A. 89, fin height 2 3/5; caudal 1 1/3, cuneate behind; least depth of caudal peduncle 2 2/3; pectoral 1 7/8; ventral 2 1/4, followed by strong spine.

Left side brown, with darker cloudings as obscure blackish or dusky blotch on hind part of lateral line arch, another near middle of straight section and third before caudal peduncle.

Genus Chaetodon Linnaeus.

Chaetodon Linnaeus, Syst. Nat., ed. 10, 1758, p. 272. Type Chaetodon capistratus Linnaeus, designated by Jordan and Gilbert, Bull. U. S. Nat. Mus., no. 16, 1883, p. 614.

Chaetedon Scopoli, Introd. Hist. Nat., 1777, p. 457. Atypic. Type Chaetodon capistratus Linnaeus.

Tetragonoptrus Walbaum, Arted. Pisc., vol. 3, 1792, p. 583. Atypic. Type Chaetodon striatus Linnaeus, designated by Bleeker, Arch. Neerl. Sci. Nat. Harlem, vol. 11, 1876, p. 305.

Rabdophorus Swainson, Nat. Hist. An., vol. 2, 1839, pp. 170, 211. Type Chaetodon ephippium Valenciennes, monotypic.

Citharoedus Kaup, Arch. Naturg., band 26, abth. 1, 1860, p. 141. Type Chaetodon meyeri Bloch, designated by Bleeker, l. c.

other obscure cloudings within dorsal and anal edges of body. Orbits dark neutral gray. Fins all pale, with obscure blotches.

Diagnosis. Differs from the known species in the increased dorsal and anal rays, also the very fine scales and larger upper eye well posterior near upper profile.

U.S.N.M., No. , Type.

1839. D. 5314. Lat. 21° 41' N., long. 116° 46' E., China Sea, vicinity Hong Kong. In 122 fathoms. November 5, 1908. Length 160 mm.

(Confertus, compact.)

Chaetodontops Bleeker, l.c. Type Chaetodon collaris Bloch, orthotypic.

Lepidochaetodon Bleeker, l.c., p. 306. Type Chaetodon unimaculatus Bloch, orthotypic.

Dyschaetodon Bleeker, l.c. Type Chaetodon lineolatus Cuvier, orthotypic.

Gonochaetodon Bleeker, l.c. Type Chaetodon triangulum (Van Hasselt) Cuvier, orthotypic.

Anisochaetodon Klunzinger, Fische. Roth. Meer., 1884, p. 54. Type Chaetodon auriga Forskål, designated by Jordan, Genera of Fishes, pt. 4, 1920, p. 429.

Osteochromis Franz, Abhandl. Bayer. Akad. Wiss., suppl. band 1, 1910, p. 52. Type Osteochromis larvatus Franz, monotypic.

Tifia Jordan and Jordan, Mem. Carnegie Mus., vol. 10, 1922, p. 60. Type Chaetodon corallicola Snyder, orthotypic.

Paracoradion Fahl, Arch. Naturg., band 89, abt. A, hefte 5, 1923, pp. 42, 107. Type

10-19-43.

Pages 2124 through 2133
apparently mis-numbered or
misreading

E. M. Wade.

Bothus assimilis (Günther)

Rhombodichthys assimilis Günther, Cat. Fishes Brit. Mus., vol. 4, p. 437, 1862 (type locality: China).

Platophrys (Platophrys) assimilis Bleeker, Nederl. Tijds. Dierk., vol. 4, p. 130, 1873 (1874) (reference).

Platophrys assimilis Chu, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 89, Jan. 1931 (compiled).

Bothus chlorospilus (Gilbert)

Platophrys chlorospilus Gilbert, Bull. U. S. Fish Comm., vol. 22, pt. 2, p. 684, fig. 267, 1903 (1905) (type locality: north coast Maui, 78 to 85 fathoms).

— Fowler, Mem. Bishop Mus., vol. 10, p. 91, 1928 (Hawaiian Islands).

Bothus inermis (Gilbert)

Platophrys inermis Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 685, fig. 268, 1903 (1905) (type locality: Pailolo Channel, between Molokai and Maui; Laysan; north of Maui; 99 to 173 fathoms).

Platophrys chlorospilus (not Gilbert) Fowler, Mem. Bishop Mus., vol. 10, p. 91, 1928 (Gilbert's material).

(not located)

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Bothus kiensis (Tanaka)

Platophrys kiensis Tanaka,

Journ. Fac. Sci. Univ. Tokyo, sect. 4, Zool., vol. 3, pt. 1, p. 38, Nov. 4, 1931 (name).

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Bothus krempfi (Chabanaud)

Grammatobothus krempfi Chabanaud,

— Chevey, Inst. Océan. Indo Chine, 19e note, p. 27, Aug. 25, 1932 (Poulo-Condore).

Bothus mancus (Broussonet)

Pleuronectes mancus Broussonet, Ichth. Dec., no pagination, pls. 3–4, 1782 (type locality: Ulietea, near Anamoka, Tahiti).

— Bonnaterre, Tabl. Ichth., p. 78, pl. 41, fig. 161, 1788 (Pacific Ocean). — Gmelin, Syst. Nat. Linn., pt. 1, p. 1238, 1789 (Pacific Ocean; not Brazil). — Walbaum, Artedi Pisc., vol. 3, p. 117, 1792 (copied).

Pleuronectes lunatus var. mancus Schneider, Syst. Ichth. Bloch, p. 154, 1801 (Pacific Ocean).

Platophrys mancus Smith and Swain, Proc. U. S. Nat. Mus., vol. 5, p. 142, 1882 (Johnston Island). — Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 17, p. 946, 1904 (Honolulu). — Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 684, 1903 (1905) (Honolulu; Pailolo Channel; between Maui and Lanai; Laysan; 34 to 140 fathoms).

— Seale, Occas. Pap. Bishop Mus., vol. 4, no. 1, p. 86, 1906 (Rarotonga; Tubuai). — Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 412, 1905 (1906) (Apia; Pago Pago). — Kendall and Goldsborough, Mem. Mus. Comp. Zool., vol. 26, p. 33, 1911 (Arno; Jabarava; Mabemo). — Weber, Siboga Exped., vol. 57, p. 427, 1913 (Bonthain).

Jordan and Jordan, Mem. Carnegie Mus., vol. 10, no. 1, p. 24, dec. 1922 (Hawaii).

— Fowler and Ball, Bull. Bishop Mus., no. 26, p. 9, 1925 (Johnston and Wake Islands). — Fowler, Bull. Bishop Mus., no. 38, p. 21, 1927 (Tongareva); Mem. Bishop Mus., vol. 10, p. 90, pl. 43, 1928 (Hawaii; Tuamotus; Mabemo; Arno; Johnston Island; Honolulu; Palmyra; Wake; Marcus; Raiatea; Rarotonga; Makatea; Agaña, Guam; Apiang).
— Chevey, Inst. Océan. Indo Chine,

19e note, p. 27, Aug. 25, 1932 (Annam).

Rhombodichthys mancus Günther, Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 342, 1909 (Ulidtea).

Bothus mancus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 34, April 1927 (Maldives).

Bothus (Platophrys) mancus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 122, 1929 (Weber's materials).

? Pleuronectes spinosus Schneider, Syst. Ichth. Bloch, p. 161, 1801 (type locality: Pacific Ocean near Hanocka Island, New Caledonia).

Rhombus macropterus Quoy and Gaimard, Voy. Uranie, Zool., p. 236, pl. 50, 1824 (type locality: Iles des Papous; Rawak).

Pleuronectes pictus Forster, in Lichtenstein Descript. Animal., p. 285, 1844 (type locality: Hanocka Island).

Rhombus pavo Bleeker, Natuurk. Tijds. Nederl. Indië, vol. 7, p. 177, 1855 (type locality: Cocos-Keeling Islands).

Rhomboidichthys pavo Günther, Cat. Fishes Brit. Mus., vol. 4, p. 435, 1862 (China; Ameiteum). — Peters, Monatsb. Akad. Wiss. Berlin, 1876, p. 844 (Bougainville Islands). — Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 53, 1880 (Malanipa, near Zamboanga). — Vaillant, Verv. Océan. Pêch. Indo Chine, 6e Note, p. 172, 1929 (Phu Yen).

Platophrys (Platophrys) pavo Bleeker, Nederl. Tijds. Dierk., vol. 4, p. 130, 1873 (1874) (China), Atlas Ichth. Ind. Neerl., vol. 6, p. 11, pl. (4) 235, fig. 2, 1866-72 (Nova Selma, Cocos-Keeling);

Platophrys pavo Seale, Occas. Pap. Bishop Mus., vol. 1, no. 3, p. 128, 1900 (Guam).

— Steindachner, Denks. Akad. Wiss. Wien, math.-nat. Kl., vol. 70, p. 510, 1901 (Honolulu); vol. 71, pt. 5, p. 20, 1902 (Honolulu). — Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, pt. 3, Zool., p. 232, May 1908 (Peros, Chagos Archipelago).

Pleuronectes rhombus (not Linnaeus) Jouan, Mém. Soc. Sci. Cherbourg, vol. 8, p. 256, 1861 (Lifou, New Caledonia).

Bothus myriaster (Schlegel)

Rhombus myriaster Schlegel, Fauna Japonica, Poiss., pts. 10 - 14, p. 181, pl. 92, fig. 2, 1846 (type locality: Japan).

Rhomboidichthys myriaster Bleeker, Act. Soc. Sci. Ind. Néerl. (. Manado Macas.), vol. 1, p. 67, 1856 (Manado). — Günther, Cat. Fishes Brit. Mus., vol. 4, p. 436, 1864 (China). — Ishikawa and Matsmura, Prelim. Cat. Fishes Mus. Tokyo, p. 25, 1897 (reference).

Platophrys (Platophrys) myriaster Bleeker, Atlas Ichth. Ind. Néerl., vol. 6, p. 10, pl. (9) 240, fig. 4, pl. (11) 242, fig. 1, 1866-72 (Celebes; Amboyna); Nederl. Tijds. Dierk., vol. 4, p. 130, 1873 (1874) (reference). — Weber and

Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 120, 1929 (Sumatra, Java, western Ceram).

Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 122, 1901 (reference).

Kl., vol. 11, p. 152, 1902 (Misima, Arabia). — Weber, Siboga Exped.,

— Jordan and Evermann, Proc. U. S. Nat. Mus., vol. 25, p. 365, 1902 (Formosa). — Jordan and Starks, Proc. U. S. Nat. Mus., vol. 31, p. 167, 1906 (Keerun, Formosa). — Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 517, 1912 (Okinawa).

— Izuka and Matsuura, Cat. Zool. Spec. Mus. Tokyo, Vertebr., p. 115, 1920 (Kagoshima).

— Chu, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 90, Jan. 1931 (compiled).

— Tanaka, Journ. Fac. Sci. Imp. Tokyo, sect. 4, Zool., vol. 3, pt. 1, p. 38, Nov. 4, 1931 (reference).

Bothus (Platophrys) myriaster Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 120, 1929 (Sumatra; East Java; Weber's material).

Platophrys myriaster Steindachner, Denks. Akad. Wiss. Wien, math.-nat. Kl., vol. 71, p. 152, 1902 (Gischin, Arabia). — Weber, Siboga Exped., vol. 57, p. 428, 1913 (Kawa, west Ceram). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 312, 1913 (reference). — Hubbs, Proc. U. S. Nat. Mus., vol. 48, p. 457, 1915 (Vincennes Strait, Japan).

→ — Reeves, Journ. Pan Pac. Res. Inst., vol. 2, no. 3, July-Sep. 1927, p. 14 (south China). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1929, p. 615 (Hong Kong). — Chu, Biol. Bull. St. John's Univ., Shanghai, no. 1, p. 90, Jan. 1931 (compiled). — Tanaka, Journ. Fac. Sci. Un. Tokyo, sect. 4, Zool., vol. 3, pt. 1, p. 38, Nov. 4, 1931 (reference).

Bothus (Platophrys) myriaster Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 120, 1929 (Sumatra; East Java; Weber's material).

Bothus myriaster Chevey, Inst. Océan. Indo-Chine, 19e note, p. 27, Aug. 25, 1932 (Annam).

Bothus bleekeri Steindachner, Verh. Zool.-bot. Gesell. Wien, vol. 2, p. 178, 1861 (type locality: Amboina).

Platophrys circularis Regan, Trans. Linn. Soc. London, vol. 13, pt. 3, Zool., p. 233, pl. 26 fig. 3, 1908 (type locality: Amirante, Seychelles Group, 22 to 85 fathoms). — Franz, Abhandl. Kon. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 62, pl. 7, fig. 66, 1910 (Fukuura). — Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, p. 312, 1913 (name).

Bothus ovalis (Regan)

Platophrys ovalis Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 232, pl. 27, fig. 6, 1908 (type locality: Amirante, Seychelles Group).

Bothus ovalis Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 32, fig. 7, April 1927 (Ganjam; Arabian).

Psettylis ocellata (not Rhombus ocellatus Agassiz) Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 437, fig. 3, 1890 (type locality:
Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 328, 1893 ( ).—
Johnstone, Ceylon Pearl Fisher., Rep. 15, p. 207, pl. 1, fig. 3, pl. 2, 1904.

Bothus pantherinus (Rüppell)

Rhombus pantherinus Rüppell, Atlas Reis nordl. Afrika, Fische, p. 121, pl. 3, fig. 1, 1828 (type locality: Mohila, Red Sea).

Psetta pantherina Rüppell, Verzeichn. Samml. Senckenberg. Mus., p. 19, 1852.

Pseudorhombus pantherinus Bleeker, Versl. Akad. Wet. Amsterdam, vol. 14, p. 103, 1862.

Rhomboidichthys pantherinus (Günther, Cat. Fishes Brit. Mus., vol. 4, p. 436, 1862 (Mauritius; Madagascar; Amboyna; Fiji); Fishes of Zanzibar, p. 112, 1866 (Aden; Zanzibar). — Schmeltz, Cat. Mus. Godeffroy, no. 4, p. 24, 1869 (Samoa). —

Klunzinger, Verh. zool. bot. Gesell. Wien, vol. 21, p. 571, 1871 (Red Sea). — Peters, Monatsb. Akad. Wiss. Berlin, p. 844, 1876 (1877) (Bougainville Island). — Steets,

Bull. U.S. Nat. Mus., no. 7, p. 57, 1877 (Honolulu), p. 59 (Fanning Islands). — Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 61, 1880 (Honolulu). — Meyer, Anal.

Soc. Españ. Hist. Nat. Madrid, vol. 14, p. 40, 1885 (Manado, Celebes; Kordo, Mysore). — Vaillant, Bull. Soc. Philom. Paris, ser. 7, vol. 11, p. 54, 1886–87 (Tahiti). — Pellegrin, Bull. Mus. Hist. Nat. Paris, vol. 4, p. 228, 1898 (Rota, Mariannes). — Waite, Austral. Mus. Records, no. 5, p. 3, 1903 (Nauru, Pleasant Island). — Günther, Journ. Bombay Nat. Hist. Soc., vol. 16, pt. 2, p. 332, 1905 (Muscat). — Regan, Ann. Mag. Nat. Hist., ser. 8, vol. 3, no. 27, p. 9, 1912.

Platophrys (Platophrys) pantherinus Bleeker, Atlas Ichth. Ind. Neerl., vol. 6, p. 11, pl. (2) 233, fig. 3, 1866–72 (Cocos; Bali; Sumatra; Batu; Celebes; Flores; Batjan; Morotai; Buru; Ceram; Amboina; Waigama; Banda; Aru).

Bull. U.S. Nat. Mus., no. 7, p. 57, 1877 (Honolulu), p. 59 (Fanning Islands). — Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 61, 1880 (Honolulu). — Meyer, Anal. Soc. Espan. Hist. Nat. Madrid, vol. 14, p. 40, 1885 (Manado, Celebes; Kordo, Mysore). — Vaillant, Bull. Soc. Philom. Paris, ser. 7, vol. 11, p. 54, 1886–87 (Tahiti). — Pellegrin, Bull. Mus. Hist. Nat. Paris, vol. 4, p. 228, 1898 (Rota, Mariannes). — Waite, Austral. Mus. Records, no. 5, p. 3, 1903 (Nauru, Pleasant Island). ✓ — Günther, Journ. Mus. Godeffroy, vol. 8, pt. 16, p. 343, 1909 (South Sea). — Pellegrin, Annu. Mus. Zool. Reg. Univ. Napoli, vol. 3, no. 27, p. 9, 1912.

Platophrys (Platophrys) pantherinus Bleeker, Atlas Ichth. Ind. Neerl., vol. 6, p. 11, pl. (2) 233, fig. 3, 1866–72 (Cocos; Bali; Sumatra; Batu; Celebes; Flores; Batjan; Morotai; Buru; Ceram; Amboina; Saparua; Banda; Aru).

Mr. Smith's direction.

Platophrys pantherinus Day, Fishes of India, pt. 3, p. 425, pl. 92, figs. 3–4, 1877 (Port Blair). — Ogilby, Proc. Linn. Soc. New South Wales, vol. 22, p. 770, 1897 (New Caledonia). — Waite, Prelim. Rep. Thetis, p. 61, 1898 (Lord Howe Island); Austral. Mus. Mem., no. 3, p. 546, 1899 (Funafuti). —

Steindachner, Denks. Akad. Wiss. Wien, math.-nat. Kl., vol. 70, p. 511, 1901 (Honolulu). — Veale, Occas. Pap. Bishop Mus., no. 5, p. 17, 1902 (Honolulu). — Steindachner, Denks. Akad. Wiss. Wien, math.-nat. Kl., vol. 71, p. 153, 1902 (Kalamaja, Koloa). — Jenkins, Bull. U. S. Fish Comm., vol. 22, p. 510, 1902 (1903) (Honolulu). — Waite, Rec. Austral. Mus., vol. 5, pt. 3, p. 226, 1904 (copied). — Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, p. 512, 1903 (1905) (Honolulu; Hilo). — Regan, Journ. Bombay Soc. Nat. Hist., vol. 16, p. 332, 1905 (Bombay). — Jordan and

Seale, Bull. Bur. Fisher, vol. 25, p. 412, 1905 (1906) (Apia). — Evermann and Seale, Bull. Bur. Fisher, vol. 26, p. 105, 1906 (1907) (Bacon). — Jordan and Richardson, Bull. Bur. Fisher, vol. 28, p. 280, 1907 (1908) (Aparri, north Luzon).

— Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 232, 1908 (Suvadiva and south Milandu, Maldives; Amirante, Seychelles). — Kendall and Goldsborough, Mem. Mus. Comp. Zool., vol. 26, p. 332, 1911 (Kambora, Fiji, Fakarava, Makemo, Guam, Moen, Namuka). — Beaufort, Bijdr. Dierk. Amsterdam, vol. 19, p. 134, 1913 (Saonek, Waigiu). — Weber, Siboga Exped., vol. 57, p. 427, 1913 (Lombok, Menado, Beo, Laiwui, Saleyer, Binongka). — Gilchrist and Thompson, Ann. Durban Mus., vol. 1, pt. 4, p. 400, May 21, 1917 (compiled). — Fowler, Copeia, no. 112, p. 84, Nov. 20, 1922 (Hawaii). — Jordan and Jordan, Mem. Carnegie Mus.,

vol. 10, no. 1, p. 24, Dec. 1922 (Hawaii).
— McCulloch, Mem. Queensland Mus., vol. 7, pt. 4, p. 244, 1922 (Murray Island, Torres Strait, Cape Flattery, Queensland; Lord Howe Island; Funafuti; Pleasant Island; India).

— Fowler, Bull. Bishop Mus., no. 22, p. 23, 1925 (Guam; Honolulu); no. 38, p. 21, 1927 (Honolulu); Mem. Bishop Museum, vol. 10, p. 91; 1928 (Maui, Hawaii, Honolulu, Samoa, Jennings, Kambara, Makemo, Guam, Truk, Papete, Tahiti, Shortland, Rarotonga, Maketea, Guam, Society Islands, Tonga, Ponapé, Kusaie, Ebon, Ascension, Takaroa). —

Schmidt, Trans. Pac. Comm. Acad. Sci. U. S. S. R., vol. 1, p. 111, 1930 (Kominato, Riu Kiu, Amboina).

Platophrys pantherina Day, Fauna Brit. India, Fishes, vol. 2, p. 443, fig. 158, 1889.

Bothus pantherinus Regan, Ann. Durban Mus., vol. 2, pt. 5, p. 212, fig. 3, 1920 (Natal). — Van Bonde, Trans. Roy. Soc. South Africa, vol. 12, pt. 4, p. 287, 1925 ( ).

— Barnard, Ann. South African Mus., vol. 21, pt. 1, p. 385, June 1925 (Natal, Kosi Bay, Delagoa Bay). — McCulloch, Austral. Mus. Mem., No. 5, pt. 2, p. 276, Sep. 10, 1929 (compiled). — Norman, Rec. Ind. Mus., vol. 29, pt. 1, p. 33, April 1927 (Spiteful Bay; Andamans; Maldives; type of Citharichthys aureus; Muscat; Gulf of Oman; Karachi; Seychelles; Andamans; Nicobars).

Bothus (Platophrys) pantherinus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 123, 1929 (Pulu Weh; Sumatra; Nias; Java; Butan; Bolor; Karakelang; Sula Islands; Obi major; Ambon; Kei; Aru; Waigiu; also Weber's materials).

Rhombus parvimanus Bennett, Proc. Zool. Soc. London, vol. 1, p. 168, 1830 (type locality: Mauritius).

Passer marchionessarum Valenciennes, Voy. Venus, Zool., p. 344, pl. 9, 1850 (type locality: Marquesas Islands).

Rhomboidichthys marchionessarum Günther, Cat. Fishes Brit. Mus., vol. 4, p. 435, 1862 (compiled).

Rhombus sumatranus Bleeker, Naturk. Tijdschr. Nederl. Indië, vol. 1, p. 409, 1850 (type locality: West Sumatra).

Platophrys tumulatus (not Bonnaterre) Jouan, Mém. Soc. Nat. Cherbourg, vol. 8, p. 256, 1861 (Port de France and Kanala, New Caledonia; likely male).

Citharichthys aureus Day, Fishes of India, pt. 3, p. 422, pl. 90, fig. 3, 1877 (type locality: Madras; post larval); Fauna Brit. India, vol. 2, p. 440, fig. 156, 1889.

Platophrys mancus (not Broussonet) Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 27, p. 946, 1904 (Honolulu). — Seale, Occas. Pap. Bishop Mus., vol. 4, no. 1, p. 86, 1906 (Tahiti, Rarotonga, Makatea, Shortland).

depth 1 3/4 to 2; head 3 1/3 to 4, width 3 to 3 3/4. Snout to lower orbit 3 1/4 to 4 1/4 in head from snout tip; lower orbit 4 to 4 3/4, 1 in snout, 1 in interorbital; maxillary reaches to or 1/5 in lower orbit, expansion 2 to 2 1/5 in lower orbit, length 2 4/5 to 3 1/10 in head from snout tip; bony interorbital width 4 2/5 to 4 2/3 in head, concave. Gill rakers 0 to 1 + 7 or 8, tubercles, 1/5 gill filaments, which 1 2/5 in lower orbit.

Scales 60 to 70 in lateral line to caudal base and 4 to 6 more on latter; 27 to 37 above,

Fins colored like body, dorsals more inclined to umber. Dorsals and anals with bright blue margins and fins crossed by numerous dark slaty bars. Caudal peduncle at caudal base with broad whitish bar. Caudal fin blacks, produced rays purplish and fin medially crossed by numerous, narrow, purple stripes. Paired fins uniform.

A1552. Tan Wan Bay, Formosa. January 25, 1910. Length 290 mm.

30 to 37 below. Left scales with 90 to 95 basal striae; 28 to 30 apical points; right scales cycloid. Arch of lateral line 4 to 6 in rest of its extent.

Dl. 88 to 94, fin height 2 1/4 to 2 1/2 in total head length; Al. 6/2 to 7/2, fin height 2 1/4 to 2 1/2; caudal 1 1/5 to 1 1/4, convex behind; least depth of caudal peduncle 2 7/8 to 2 2/3; pectoral 1 to 1 3/5, with filaments sometimes reaching nearly to middle of caudal; ventral 1 2/3 to 1 3/4.

Color very variable, ground color from pale gray to brown. Left side neutral gray, mottled

downward; blue basal bar with narrow yellowish brown bar beneath as fish fades. Anal like dorsal. Caudal pale; probably whitish basally in life. Paired fins brown, without yellow on terminal portion of pectoral.

8530. Verde del Sur, Palawan reef. April 7, 1909. Length 275 mm. Sides with longitudinal gray lines. Tawney area behind gill opening, $\frac{2}{3}$ eye diameter, forms blotch its pectoral base. Side of head mottled with tawney. Purple brown blotch, smaller than eye, above gill opening, becomes black. Dorsal tawney, with 3 or 4 bars in soft fin, and short bars in front of spinous fin, posterior rays blackish.

darker and with many small
dark rings. Often crowded white
to gray spots variably and
irregularly over whole surface.
Along lateral line 2 imperfect
blackish blotches, first at arch
and second midway in straight
section. Vertical fins with
small dusky spots or specks on
rays, also larger scattered
blackish spots at intervals.
Besides these many whitish
variable spots in some examples.
Right side whitish, and whitish
spots often distinct on vertical
fins, which otherwise grayish
terminally.

7842. Tagamala Island. January 7, 1908. Length 235 mm. Generally brown, with narrow slaty stripes, interspaces umber. Head laterally like body, green color forming reticulating lines enclosing paler brown areas; slaty stripe under eye and 1 or 2 indistinct ones before eye, interspaces yellow. Black blotch at upper angle of opercle slightly smaller than eye. Chin and breast tinged with purple. Dorsal yellowish brown, edge bright blue on narrow black submarginal line; below latter broader broken lines of slaty blue; on soft fin forming chord to margin, short lines near vertical edge parallel but diminishing

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Bothus pennatus (Ogilby)

Platophrys pennata Ogilby, Mem. Queensland Mus., vol. 2, p. 83, Dec. 10, 1913 (type locality: Queensland).

Grammatobothus pennatus Mc Cullock, Austral. Mus. Mem., No. 5, pt. 2, p. 277, Sep. 10, 1929 (reference).

Bothus polylepis (Alcock)

Arnoglossus polylepis Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, p. 290, pl. 16, fig. 1, 1889 (type locality: off east coast of Ceylon, 34 fathoms); Illustr. Zool. Investigator, pt. 1, p. 3, 1892 (reference).

Rhombodichthys polylepis Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 434, 1890 ( ); Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 328 ( ); Illustr. Zool. Investigator, pt. 5, pl. 24, figs. 4-5, 1898.

Bothus polylepis Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 31, April 1927 (off south Ceylon; south east Ceylon; 32 to 34 fathoms).

Bothus polyophthalmus (Bleeker)

Platophrys (Platophrys) polyophthalmus Bleeker, Nederl. Tijds. Dierk., vol. 3, p. 46, 1866 (type locality: Sumatra); Atlas Ichth. Ind. Neerl., vol. 6, p. 12, pl. (3) 234, fig. 3 (types).

Platophrys polyophthalmus McCulloch, Mem. Queensland Mus., vol. 7, pt. 4, p. 244, 1922 (between Cairns and Rockhampton).

Grammatobothus polyophthalmus Norman, Biol. Res. Endeavour, vol. 5, p. 253, 1926 ( ); Rec. Indian Mus., vol. 29, pt. 1, p. 35, fig. 8, April 1927 (off south Ceylon, Cape Negrais, Burma, 32 to 49 fathoms). — McCulloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 276, Sep. 10, 1929 (compiled).

Bothus (Platophrys) polyophthalmus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 119, 1929 (Sumatra, Java Sea, Malacca Strait).

Rhombidichthys angustifrons Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 46, pl. 21, fig. B, 1880 (type locality: Arafura Sea, 30 fathoms). — Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 435, 1890 ( ); Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 328, 1896.

Platophrys angustifrons Fowler, Mem. Bishop Mus., vol. 10, p. 91, 1928 (compiled).

Psettylis ocellata Jenkins, Mem. Indian Mus., vol. 3, p. 27, 1910.

Bothus thompsoni (Fowler)

Platophrys thompsoni Fowler, Occas. Pap. Bishop Mus., vol. 8, no. 7, p. 388, 1923 (type locality: Honolulu); mem. Bishop Mus., vol. 10, p. 91, pl. 4C, 1928 (type).

Bothus obliquiocularis new species.

Depth 1 9/10 to 2 1/5; head 3 2/5 to 3 1/2, width 2 1/16 to 2 1/2. Snout to lower orbit 3 7/8 to 4 in head from snout tip; lower orbit 3 1/2 to 3 2/3, greater than snout, entirely before upper eye in male, advanced 1/2 from upper in female; maxillary reaches 1/5 to 1/4 in lower orbit, expansion 3 to 3 1/2, length 2 1/3 to 2 2/5 in head from snout tip; interorbital 3 1/8 to 1/3, depressed or well below orbits. Gill rakers 0 + 9, lanceolate, 4/5 of gill filaments, which 2 3/4 in lower orbit.

Scales 42 or 43 in lateral line to caudal base and 5 or 6 more on latter; 10 above, 12 below. Snout naked before lower orbit, though scaled above to upper orbit, also interorbital. Vertical fins all finely scaled more or less basally, especially caudal. Scales with 44 to 46 fine radiating basal striae; 38 to 40 low uniform small apical denticles; circuli fine, continuous.

Arch of lateral line 3 1/2 to 3 3/5 in straight section to caudal base. Scales on right side cycloid.

D. 83 to 84, fin height 2 to 2 1/8 in total head length; A. 64, fin height 2 1/8 to 2 3/5; caudal 1 1/3 to 1 2/5, broadly convex behind; least depth of caudal pedunc1e 2 1/2 to 2 4/5; pectoral 1 3/4 to 1 4/5; ventral 1 1/8 to 1 7/8.

Left side drab, finely speckled with darker. Orbits gray. Fins all pale to whitish, with dark spots. Right side whitish, dark spots on vertical fins showing through less distinctly than on left or colored side.

D. D. T.

across lateral line nearly to dorsal base. Soft dorsal below black inframarginal line bright orange, merging gradually into dusky of base. Anal more nearly yellow. Third bar on caudal yellow, not transparent. Pectoral plain dusky, ventral slightly yellow.

434. Cuyo Island. April 9, 1909. Length 116 mm.

1154. Hermana Mayor Island. May 8, 1909. Length 123 mm.

1 example. Jolo Island, Jolo. March 7, 1908. Length 40 mm. [428.] Sides silvery gray, crossed by narrow diagonal black bands. Breast and belly white, former with light yellow wash. Back with olive shades. Ocular bar nearly breadth of eye, beginning in front of dorsal, ending in spot on breast narrowly edged with pale.

Diagnosis. Seems to differ from the known forms in the very advanced lower orbit, which entirely before upper in large examples. In combination also large scales less than 40. In the short pectoral 1 3/4 in head it approaches Bothus latifrons (Regan), though that species with different ocular arrangement.

Typ. U.S.N.M. No., , type.

5 examples. Philippines (~~evidently~~ likely from deep water). Length 48 to 78 mm., largest type.

stripes become bright blue and continue as such till above gill opening; next stripe immediately under blotch similar. Black spot on upper half of caudal peduncle crossed top in axil of dorsal, bordered below by bluish white line. First body color, edge of soft dorsal hyaline and brown; both dorsal and anal more or less dusky terminally; dorsal spines dusky yellow, membranes clearer and brighter. Terminal third of caudal dusky hyaline, adjoining yellow much dusted. Pectoral dusky hyaline, yellowish at base. Ventral uniform yellow.

884. Port Galera, Mindoro. June 9, 1908. Length 120 mm. [658.]

2875. Kan Wan, Formosa. Length 142 mm.

Bothus ~~philippinus~~ tchangi new species

depth 2 2/5; head 3 3/4, width 3 1/4. Snout to lower orbit 4 1/8 in head from snout tip; lower orbit 4 1/5, subequal with snout, advanced 1/4 before upper eye; maxillary reaches 1/5 in lower orbit, expansion 2 1/2, length 2 2/5 in head from snout tip; interorbital narrow bony ridge, width 1/2 pupil. Gill rakers 1+7, short lanceolate points, 1/2 gill filaments, which 1/2 lower orbit.

Scales 65 in lateral line to ~~lower orbit~~ caudal base and 5 more on latter; 16 above, 18 below. Arch of lateral line 3 1/3 in straight section to caudal base. Muzzle, including maxillary, naked. Dorsal and anal with row of

958. Langao Point. June 24, 1909.
Length 98 mm.

3612. Maculabo Island. June 13, 1909.
Length 86 mm.

3871. Near Palag Bay, Luzon. June 16,
1909. Length 110 mm.

4891, 1152 [1640]. Porangpong Island.
June 11, 1909. Length 114 to 130 mm.
Pale silvery yellow, dusky stripe through
each row of scales. Brown or black
ocular band wide as pupil, margined
each side by white blue line. Tip of snout
and chin dusky orange. Postocular region
with brown spots, continuation of dusky
body stripes. On upper side, between
fourth and tenth dusky stripes large
black or very dark blue blotch
extending very slightly behind shoulder
to near base of anterior soft dorsal
rays, through this blotch dusky.

fine scales along each ray, 2 rows on each caudal ray. Scales with 50 to 52 basal radiating striae; 25 to 28 short slender apical denticles; circuli very fine, extend abruptly to apical end of scale. Right scales cycloid.

D. 11/2, fin height 2 1/4 in total head length; A. 87, fin height 2 1/4; caudal 1 1/3, broadly cuneate behind; least depth of caudal peduncle 2 2/3; pectoral 2; ventral 1 4/5, followed by strong spine.

Left side pale brown, obscurely mottled with darker. Obscure dark blotch at front of straight section of lateral line and row of several others within dorsal and anal edges of body. Fins all more or less sprinkled

Black ocellated blotch at upper part of caudal peduncle largely, little larger than eye. Fins all dull brown, caudal broadly pale or grayish behind.

~~East Indies, Philippines, Formosa, Queensland, Polynesia~~

Previously apparently known only from Gilby's description, based on an example but 75 mm. long in the Queensland Museum. This species appears to be distinct from Chaetodon plebeius in the presence of the dark blotch on the caudal peduncle.

with small brown specks. Orbits neutral slate. Irides yellowish. Right side whitish.

Diagnosis. Related to Bothus profundus Weber, but that species with fewer dorsal rays (90 to 95), anal rays 70 to 73, scales 55 to 60, 15 above, 10 below. Bothus polyspilus (Bleeker) differs in having cycloid scales on both sides of body. Bothus elongatus Weber is also a little different, with fewer scales 63 to 65, fewer dorsal rays 100 to 102, fewer anal rays 78 or 79, though with same lower gill rakers 7.

U. S., N. M., No. , type.

D. XLV, 16, I or 17, I, last spine $1\frac{3}{5}$ to 2 in head, fifth ray $1\frac{2}{5}$ to $1\frac{4}{5}$; A. IV, 14, I or 15, I, second spine $1\frac{3}{5}$ to $1\frac{4}{5}$, third ray $1\frac{2}{3}$ to $1\frac{4}{5}$; least depth of caudal peduncle $2\frac{2}{5}$ to 3; caudal $1\frac{2}{5}$ to $1\frac{1}{2}$, hind edge broadly convex; pectoral $1\frac{1}{8}$ to $1\frac{1}{5}$; ventral $1\frac{1}{8}$ to $1\frac{1}{5}$.

Back brown, below pale brown to whitish. Each row of body scales with median dark brown line or stripe, broader and darker above lateral line. Large blackish longitudinal blotch along greater part of lateral line and side of back. Black band from middle of predorsal, not meeting its fellow, down through eye though only little wider than pupil and reaching gill opening below, but not on chest; margined with white line in front and behind.

1416. D. 5475. San Bernardino Light, S. 70° W., 1 miles (lat. 12°35'26" N., long. 124°22'12" E.), east coast of Luzon. In 195 fathoms. June 24, 1909. Length 210 mm. Type.

depth 1 2/3 to 1 4/5; head 3 1/8 to 3 2/5, width 1 4/5 to 1 7/8. Snout 2 7/8 to 3 in head; eye 3 to 3 1/3, 1 to 1 1/8 in snout, 1 to 1 1/5 in interorbital; maxillary 3/5 to 3/4 in snout, 3 4/5 to 4 in head; interorbital 3 4/5 to 4, broadly convex. Gill rakers 7 + 14, short points, 1/8 of gill filaments, which 1 1/2 in eye.

Scales 40 to 42 between gill opening and caudal base; tubes 30 to 32 in lateral line; 8 or 9 scales above lateral line, 16 to 17 below. Scales with 6 to 9 basal radiating striae; apical denticles 70 to 96, with 7 to 8 transverse series of basal elements.

Crossobothus new subgenus

Type Crossobothus variegatus new species.

Genus Hemitaurichthys Bleeker.

Hemitaurichthys Bleeker, Arch. Sci. Nat. Néerl., vol. II, 1876, p. 304. Type Chaetodon polylepis Bleeker, monotypic.

Differs from Chaetodon chiefly in its small scales and teeth and fewer dorsal rays.

Analysis of the species.

a. Yellow, with head and occiput lavender, also large triangular lavender blotch on back with angle at last dorsal spines. Zoster

aa. Uniform neutral dusky, especially fins terminally. Thompsoni

Diagnosis. Differs from subgenus Bothus Rafinesque chiefly in the character of the scales, which greatly suggest those of Crossorhombus, though with entirely different arrangement of the eyes.

(Κροσσωτός, fringed, from the long slender denticles of the scales; Bothus.)

. 4823. Tidore Island, south of Ternate. November 24, 1909. Length 125 mm.

22967. Reefs in Apra Bay, Guam. November 19–21, 1907. Length 130 mm.

52325 U.S.N.M. Apia, Samoa. Albatross Collection. Length 113 to 140 mm. 6 examples.

65452 U.S.N.M. Fakarava. Albatross Collection, 1899. Length 40 mm.

71606 U.S.N.M. Hafa, Okinawa, Riu Kiu. Albatross Collection 1906. Length 130 mm.

Bothus
~~Crossorhombus~~ variegatus new species

Depth 2 1/3 to 2 1/2; head 3 2/5 to 3 7/8, width 3 3/5 to 3 4/5. Snout tip to lower orbit 5 to 5 1/8 in head from snout tip; lower orbit 2 3/4 to 3, greatly exceeds snout, 1/5 to 1/4 advanced from upper orbit; maxillary reaches 1/8 to 1/5 in lower orbit, expansion 4 to 4 1/2, length 3 1/3 to 3 1/2 in head from snout tip; interorbital narrow trenchant keel. Gill rakers 3 + 8, lanceolate, 1/2 of gill filaments, which 3 1/5 in lower orbit.

Scales 71 to 73 in lateral line to caudal base and 5 or 6 more on latter; 16 to 18 above, 19 or 20 below. Muzzle largely naked. Small scales over vertical

band begins before front of dorsal, ends on breast, widest just below eye and somewhat less than eye in width. Iris golden outside ocular band. Dorsal, anal and caudal like body, edges narrowly hyaline, submarginally nearly cadmium; terminal half of caudal dusky hyaline. Pectoral dusky hyaline, yellow basally. Ventral bright sulphur yellow.

A 564. Tomabal Island. September 18, 1909. Length 150 mm.

1050 and 1051. Tulnalutan Island. September 9, 1909. Length 133 to 141 mm.

962. West coast of Palaui Island. November 18, 1908. Length 144 mm.

first basally. Scales with 46 to 55 close set radiating basal striae; 25 to .30 long slender apical denticles, subequal, nearly 2/5 long as scale; circuli fine, complete. Right scales smooth or cycloid. Arch of lateral line 5 to 5 1/2 in straight section of lateral line to caudal base.

D. 96 to 98, fin height 1 9/10 to 2 1/8 in total head length; A. 75 to 77, fin height 2 to 2 1/10; caudal 1 1/4 to 1 2/7, ends in slight median point behind; least depth of caudal peduncle 2 to 3 1/10; pectoral 1 1/4 to 1 3/5; ventral 1 9/10.

~~Life~~ Fawn color to walnut brown on left side, with 3 rather ill defined broad transverse dark brown bands, first at pectoral

7079. San Roque, Leyte Island. July 29, 1909. Length 128 mm.

1290 and 2[illegible]708. Vitanbai Reef. September 24, 1909. Length 101 to 112 mm.

1136. Sulada Island. September 18, 1909. Length 128 mm.

482, 483, 9876. Jakisa Island. November 9, 1909. Length 100 to 131 mm.

4669. Tambum Siguurbul, Tingui Island. September 14, 1909. Length 130 mm.

900. Tapiantana. September 13, 1909. Length 124 mm.

10380. Tilig, Lubang Island. July 15, 1908. Length 113 mm.

471. Tomahu Island. December 12, 1909. Length 116 mm.

37. Tumalutan Island. September 9, 1909. Length 123 mm.

region, second little behind
middle of body and third close
before caudal peduncle. Body
everywhere with obscure paler
variable rounded blotches, also
invading dark transverse bands.
Orbits neutral gray. Fins all
more or less variegated, dorsal
and anal with irregular dark
blotches, somewhat as invasions
from dark transverse bands
and terminally small dark spots
sprinkled on rays. Caudal pale
basally, median rays sub terminally
blackish, edges all pale. Pectoral pale, or whitish
somewhat basally, with dark
spots. Ventral pale, margin
white, with submarginal black
blotch. Right side whitish,
also paired right fins. Vertical

961. Langao Point. June 24, 1909. Length 83 mm.

978. Ligpo Point. June 18, 1908. Length 118 mm.

4879. Little Santa Cruz Island. May 28, 1908. Length 136 mm.

3613 to 3615. Maculabo Island. June 13, 1909. Length 137 to 146 mm.

914. Maculabo Island. June 14, 1909. Length 133 mm.

1172. Mahinog, Camiguin Island. August 3, 1909. Length 109 mm.

580. Matnog Bay. May 31, 1909. Length 82 mm.

4643. Port Binanga, Subig Bay. January 18, 1908. Length 115 mm.

10336 and 10478. Port Maricaban. July 21, 1908. Length 89 to 97 mm.

412. Port Palapag. June 3, 1909. Length 103 mm.

fins of blind side pale basally, markings of colored side reflected through less brilliantly, though subterminal dark caudal spot most distinct.

U. S. N. M., no. , type.

3311. D. 5481. Cabugan Grande Island (N.), N. 86° W., 3.8 miles (lat. 10° 27' 30" N., long. 125° 17' 10" E.), between Samar and Leyte. In 61 fathoms. July 30, 1909. Length 92 mm. Type.

4282. D. 5482. Cabugan Grande Island (N.), N. 87° W., 4.5 miles (lat. 10° 27' 30" N., 125° 18' E.). In 67 fathoms. July 30, 1909. Length 82 mm. Paratype.

1038. D. 5304. China Sea, vicinity Hong Kong (lat. 21° 46' N., long. 114° 47' E.). In 34 fathoms. August 9, 1908. Length 72 mm. Paratype.

Forehead and snout with pale orange shades, interorbital with greenish. Behind white border of ocular band, dusky showing as half bar on opercle. Broad black band on soft dorsal and anal, bordered narrowly white on fins and dusky on caudal pedumcle, latter beyond bright yellow including caudal base. dorsal olive, small orange blotch on tips of spines in front of black bands. Anal yellow anteriorly, becoming somewhat olive at base, white border of black band continued forward on tips of soft rays and black line submarginal. Caudal hyaline terminally, separated from yellow base by narrow black band. Pectoral hyaline. Ventral bright yellow.

1309 2. Kapopoang Island. December 28, 1909. Length 134 mm.

Genus Crossorhombus Regan

Crossorhombus Regan, Ann. Durban Mus., vol. 2, pt. 5, p. 211, 1920. (Type Platophrys dimorphus Günther, orthotypic.)

Eyes on left side. Mouth small. Teeth small, pointed, uniserial in jaws. Palate toothless. Interorbital region concave. Gill membranes united. Upper angle of gill opening short distance above pectoral fin. Scaling of head and body continuous below lateral line. Scales large, strongly ciliated on left side, dealy ciliated or cycloid on right side. Lateral line developed on both sides, with a strong curve anteriorly. Dorsal fin originating in advance of eye. Left ventral median, with long base; right lateral, base shorter.

Crossorhombus azureus (Alcock)

Rhomboidichthys azureus Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 1, no. 3, p. 283, pl. 16, fig. 3, 1889 (type locality: eight to 20 miles south of Puri); Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 435, 1890( );

Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 328, 1896( ); Illustrat. Zool. Investigator, pt. 5, pl. 24, fig. 3, 1898. — Johnstone, Ceylon Pearl Fisher. Rep. 15, p. 210, 1904. — Jenkins, Mem. Ind. Mus., vol. 3, p. 27, 1910.

Crossorhombus azureus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 30, 1927 (off south Ceylon; west of Colombo; Ganjam; Orissa; Arabian; Nicobars; Galle, Ceylon; 7 to 33 fathoms).

Crossorhombus valde-rostratus (Alcock)

Rhomboidichthys valde-rostratus Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 435, 1890 (type locality: off south east Ceylon, 32 fathoms);
Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 328, 1896 ( );
Illustrat. Zool. Investigator, pt. 5, pl. 24, fig. 2, 1898.

Crossorhombus valde-rostratus Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 28, fig. 9, April 1927 (type).

Platophrys dimorphus Gilchrist, Marine Investig. South Africa, vol. 3, p. 10, pl. 27, 1905 (type locality: off Umhlanga River mouth, Natal, 22 to 26 fathoms). —Gilchrist and Thompson, Ann. Durban Mus., vol. 1, pt. 4, p. 400, May 21, 1917 (reference).

Crossorhombus dimorphus Regan, Ann. Durban Mus., vol. 2, p. 212, 1920 (Natal).

— Barnard, Ann. South African Mus., vol. 21, pt. 1, p. 386, June 1925 (Natal, Zululand, Delagoa Bay, 3 to 30 fathoms).

Platophrys grandisquama (not Schlegel) Gilchrist, Marine Investig. South Africa, vol. 4, p. 161, 1906.

Engyprosopon natalensis Regan, Ann. Durban Mus., vol. 2, p. 211, 1920 (type locality: Natal, off mouth of Amatikulu River, 26 or 27 fathoms).

depth 2 1/8 in.; head 3 2/3, width 3 1/3 in. Snout tip to lower orbit 4 1/2 in head from snout tip; lower orbit 3 1/4, greatly exceeds snout, 1/2 in advance of upper orbit; maxillary reaches 1/5 in lower orbit, expansion 3 3/4 in lower orbit, length 2 4/5 in head from snout tip; interorbital 5 1/2, depressed, deeply concave, 1 4/5 in lower orbit. Gill rakers 0+6, lanceolate, robust, 1 1/5 in gill filaments, which 2 2/5 in lower orbit.

Scales 60 in lateral line to caudal base and 4 more on latter; 19 above, 23 below. Caudal base scaly. Very fine scales, as row along fin ray from base, on median dorsal and anal rays. Left scales ciliate, ctenoid, right ones cycloid. Scales with 40 close set radiating basal striae; 35 to 37

long, slender, subequal, curved apical denticles; circuli fine, continuous. Lateral line ~~only~~ on left or colored distinct side, 1, V-arch straightened or depressed above, 4 in straight (on right side simply as forks) section to caudal base.

D. 95, fin height 3 1/6 in total head; A. 78, fin height 2 1/5; caudal 1 2/5, convex behind; least depth of caudal peduncle 3; pectoral 1 3/5; ventral 1 7/8

Dark russett brown (on left side), four dark or blackish brown ill defined blotches along lateral line and other small dark spots all along body edges submarginally. Fins brownish. Orbits neutral gray. Right side whitish, fin rays all more or less grayish.

Natal, Zululand, Portuguese East Africa, India, Ceylon, Philippines.

10055. D. 5277. Malavatuan Island (N.), S. 56° E., 8 miles (lat. 13° 56' 55" N., long. 120° 13' 45" E.), southern Luzon. In 80 fathoms. July 17, 1908. Length 108 mm.

Genus Chascanopsetta Alcock

Chascanopsetta Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, p. 14, 1894. (Type Chascanopsetta lugubris Alcock, monotypic.)

Pelecanichthys Gilbert and Cramer, Proc. U. S. Nat. Mus., vol. 19, p. 432, 1897. (Type Pelecanichthys crumenalis Gilbert and Cramer, monotypic.)

Trachypterophrys Franz, Abhandl. Kgl. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 60, 1910. (Type Trachypterophrys raptator Franz, monotypic.)

Body elongate, slender, excessively compressed, tapers gradually to caudal. Head large, oblique. Snout short, pointed. Eyes elliptical, upper advanced. Maxillary, premaxillary and palatopterygoid 3 very slender bony rods, parallel and closely juxtaposed greater part of length.

mandible extended forward far beyond snout tip, rami very slender and flexible, rotate inward so teeth of 2 rami meet and interlock in closed mouth. Mandibular membranes voluminous, form gular pouch. Angular bone forms slender extension beyond mandibular articulation and hind edge of opercle. Teeth minute, uniform. Preopercle edge free. No gill rakers. Scales exceedingly minute. Lateral line axial, conspicuous, continuous, with low, short anterior arch. Dorsal and anal long, former beginning on snout. Caudal lanceolate. Caudal peduncle short. Paired fins small.

Chaetodon maculiceps (Ogilby).

Megaprotodon maculiceps Ogilby, Proc. Roy. Soc. Queensland, vol. 23, 1910, p. 14.

Moreton Bay.

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Chascanopsetta crumenalis (Gilbert and Cramer)

Pelecanichthys crumenalis Gilbert and Cramer, Proc. U. S. Nat. Mus., vol. 19, p. 433, pl. 47, 1897 (type locality: Hawaiian Islands, 295 to 298 fathoms).

— Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 690, 1903 (1905) (Pailolo and Kaiwi Channels; Oahu; Maui; 238 to 344 fathoms). — Jordan and Veale, Bull. Bur. Fisher., vol. 25, p. 413, 1905 (1906) (name). — Fowler, Mem. Bishop Mus., vol. 10, p. 93, 1928 (compiled).

Pelecanichthys crumenalis

Chascanopsetta lugubris Alcock

Chascanopsetta lugubris Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, p. 14, pl. 6, fig. 4, 1894 (type locality: Bay of Bengal, 145 to 250 fathoms). — Goode and Bean, Oceanic Ichth., p. 535, 1895 (name). — Alcock, Illustrat. Zool. Investigator, pt. , pl. 15, fig. 3, 1895; Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 327, 1896 ( ); Cat. Deep Sea Fishes Indian Mus., p. 125, 1899.

— Norman, Records Ind. Mus., vol. 29, pt. 1, p. 35, fig. 9, April 1927 (Bengal Bay; west of Ceylon; 143 to 250 fathoms).

Chascanopsetta gilchristi Bonde, Rep. Fisher. Mar. Biol. Surv. South Africa, no. 2, Special Rep. 1, p. 7, pl. 2, fig. 2, 1922 (type locality: off Natal, 275 fathoms).

Chascanopsetta gilchristi

— Barnard, Ann. South African Mus., vol. 21, pt. 1, p. 390, June 1925 (type; type of Chascanopsetta maculata).

Chascanopsetta maculata Von Bonde, Rep. Fisher. mar. Biol. Surv. South Africa, no. 2, Special Rep. 1, p. 8 (type locality: Delagoa Bay; 174 fathoms).

Natal; 225

Depth 3 3/5 to 3 7/8; head 4 to 4 3/4, width 3 7/8 to 4 1/5. Snout to lower orbit 5 2/5 to 6 in head from snout tip; lower orbit 4, greater than snout, upper orbit 1/5 to 1/4 in advance of lower; maxillary slender, extends 1/4 to 1/3 behind lower orbit, length 1 1/3 to 1 2/5 in head from snout tip; mandible 1/8 to 1/6; teeth slender, conic, small, in narrow irregular row or series; bony interorbital slender or narrow, width 5 to 5 1/2 in lower orbit. Gill rakers obsolete; gill filaments 2 1/4 in lower orbit.

Scales 180 to 215 in lateral line to caudal base and 15 to 17 more on latter; 38 to 40 above, 65 to 68 below. Scales very minute, cycloid on both sides of body. Lateral line on both sides, arch long, low, flat topped, left arch 5 4/5 to 6 1/2 in straight section

to caudal base. Vcales with 8 to 10 basal radiating rather wide-set striae; circuli coarse, continuous.

D. 118 to 120, fin height 2 1/3 to 3 in total head length; A. 79 to 82, fin height 2 3/4 to 3; caudal 1 1/4 to 1 1/2, ends in median point behind; least depth of caudal peduncle 4 2/5 to 5; left pectoral 1 7/8 to 2, right pectoral 2 4/5 to 3; left ventral 2 to 2 1/5, right ventrall 2 to 2 2/5.

Left side uniformly chocolate brown, interradial rays in rather broad pale area all around body. Orbits dark neutral gray. Fins gray brown, caudal more dusky terminally. Left pectoral and ventrall brownish, right pectoral whitish. Entire right side whitish, fins grayish, caudal pale or whitish basally.

South Africa, Ceylon, Bengal Bay. Although Norman does not give a count of either pores in lateral line or scales along its course, in most

all other details his description 2169
and outline figure agrees.
→

↑ 7937. D. 5363. Cape Santiago Light, 5.79° W., 4.5 miles (lat. 13°47'20" N., long. 120°43'30" E.), Balayan Bay, Luzon. Sn 180 fathoms. February 20, 1909. Length 265 mm.

2582. D. 5272. Escarceo Light, N. 31½° W., 3.25 miles (lat. 13°28'45" N., 121°01'12" E.), China Sea vicinity southern Luzon. Sn 162 fathoms. July 23, 1908. Length 178 mm.

2169. D. 55523. Point Tagolo Light, S. 48° W., 6.7 miles (lat. 8°48'44" N., long. 123°27'35" E.), northern Mindanao. August 10, 1909. Length 183 mm.

2465. D. 5476. San Bernardino Light, S. 37° W., 13.5 miles (lat. 12°56'24" N., long. 124°25'24" E.), east coast of Luzon. Sn 270 fathoms. June 24, 1909. Length 183 mm.

all other details his description and outline figure agrees.

1867, 1869. D. 5247. Dumalag Island (S.), S. 78° W., 3.8 miles (lat. 7°02'N., long. 125°38'45"E.), Gulf of Davao. 3 m 135 fathoms. May 18, 1908. Length 135 to 155 mm.

2382. D. 5292. Escarceo Light, N. 36° W., 3.25 miles (lat. 13°28'45"N., 121°01'12"E.), China Sea vicinity southern Luzon. 3 m 162 fathoms. July 23, 1908. Length 178 mm.

2169. D. 5523. Point Tagolo Light, S. 48° W., 6.7 miles (lat. 8°48'44"N., long. 123°27'35"E.), northern Mindanao. August 10, 1909. Length 183 mm.

2465. D. 5476. San Bernardino Light, S. 37° W., 13.5 miles (lat. 12°56'24"N., long. 124°25'24"E.), east coast of Luzon. 3 m 270 fathoms. June 24, 1909. Length 183 mm.

A1155. Yame Road, Gillolo Island. December 1, 1909. Length A1155 mm.

666. Hokuko, Soo Wan, Formosa. January 29, 1910. Length 150 mm.

656. Nan Wan, Formosa. January 25, 1910. Length 142 mm.

A1593. Soo Wan, Formosa. January 29, 1910. Length 145 mm.

Chascanopsetta prorigera Gilbert

Chascanopsetta prorigera Gilbert, Bull. Bur. Fisher., vol. 23, pt. 2, p. 689, fig. 271, 1903 (1905) (type locality: off north Maui, 187 to 202 fathoms).—

Jordan and Seale, Bull. Bur. Fisher., vol. 25, p. 413, 1905 (1906) (name).—
Fowler, Mem. Bishop Mus., vol. 10, p. 92, 1928 (compiled).

Chascanopsetta raptator (Franz)

Trachypterophrys raptator Franz, Abhandl. Kon. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 60, pl. 7, fig. 54, 1910 (type locality: Fukuura).

Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 315, 1913 (copied).

Chascanopsetta raptator Tanaka, Journ. Fac. Sci. Imp. Univ. Tokyo, sect. 4, Zool., vol. 3, pt. 1, p. 38, Nov. 4, 1931 (reference).

Genus Laeops Günther

Laeops Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 29, 1880. (Type, Laeops parviceps Günther, monotypic.)

Scianectes Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 1, no. 3, p. 284, 1889. (Type, Scianectes lophoptera Alcock, monotypic.)

Lambdopsetta Smith and Pope, Proc. U. S. Nat. Mus., vol. 31, p. 496, 1906. (Type, Lambdopsetta kitaharae Smith and Pope, monotypic.)

?Laeoptichthys Hubbs, Proc. U. S. Nat. Mus., vol. 48, p. 460, 1915. (Type, Laeoptichthys fragilis Hubbs, orthotypic.)

Body oblong or pyriform, more or less delicate to transparent. Head short or small. Eyes on left side, close together. Mouth cleft small or

moderate, very narrow. Teeth minute, villiform, uniserial or in narrow bands in jaws. Palate toothless, sometimes vomerine teeth present. Gill opening moderately wide, membranes united anteriorly and rather broadly. Gill rakers well spaced or numerous, short, pointed. Lateral line with short arch over gill opening, rest axial and straight. Dorsal begins above front edge of eye. Pectoral small. Left ventral with long base, in same line as anal, right ventral short and both fins distinct from anal.

Leptolaeops new subgenus

Type Laeops clarus new species

Diagnosis. Related to Laeops Günther though readily distinguished by its very fine squamation, small head, elongately slender body and largely transparent nature of the interradial tissues. The exceedingly minute deciduous scales are very characteristic and are far more numerous than among any of the known related forms.

(Λεπτος, slender; Laeops.)

8673. Biri Channel. June 2, 1909. Length 122 mm.

1182 [15-39]. Bolalo Bay. March 10, 1909. Length 145 mm.

1099. Bugsuk Island. January 5, 1909. Length 86 mm.

778 to 780. Jolo. March 6, 1908. Length 75 to 94 mm.

A 405. Jolo market. March 7, 1908. Length 141 mm.

140 and 431. Langao Point, Luzon. June 24, 1909. Length 95 to 126 mm.

1116, 6028 to 6029, 6031. Little Santa Cruz Island. May 28, 1908. Length 136 to 160 mm.

369. Malapascua Island. March 16, 1909. Length 111 mm.

400 and 401. Matnog Bay. May 31, 1909. Length 124 to 143 mm.

6279. Medio Island, Galera Bay, Mindoro. June 9, 1908. Length 140 mm.

605, 1092. Murcielagos Bay. August 9, 1909. Length 110 to 115 mm.

Laeops clarus new species

Depth 3 1/2 to 3 2/3; head 5 3/4 to 5 7/8, width 3 2/3 to 4. Snout to lower orbit 3 1/2 to 6 in head from snout tip; lower orbit 3 1/2 to 3 2/3, 1/5 to 1/3 in advance of upper orbit, which impinges on upper profile; maxillary vertical, before front edge of lower orbit, length 3 2/3 to 4 1/2 in head from snout tip; teeth minute, simple, very narrow band in each jaw of blind or right side; interorbital narrow bony elevated groove, width 5 1/2 in lower orbit. Gill rakers 0+10 short weak points, 1/5 of gill filaments, which 1 1/2 in lower orbit.

Scales 143 to 145 in lateral axial series to caudal base and

4725 and 4744. Pilar Island. September 12, 1909. Length 67 to 97 mm.

629. Port Bamalacan, Marinduque. February 23, 1909. Length 120 mm.

46. Port Langcan, Palawan Island. April 8, 1909. Length 123 mm.

10480 and 10494. Port Maricaban. July 21, 1908. Length 128 to 130 mm.

6999. Port San Pio Quinto, Camiguin Island. November 10, 1908. Length 157 mm.

6906. Santo Domingo, Batan. November 7, 1908. Length 150 mm.

209 and 794. Tagnak Island. January 7, 1909. Length 117 to 127 mm.

1166 [161]. Tataan Bay, Simalue Island. February 19, 1908. Length 82 mm. Sulphur yellow, dusky above, pale on breast. An elliptical black blotch long as head above axial region, slightly posterior to middle of body. Dorsal

5 or 6 more on latter; 28 or 29 above, 33 or 34 below. Scales with 12 to 16 basal radiating striae; circuli rather few, continuous. All scales cycloid. Fins naked, except small scales on caudal basally. Muzzle naked. Arch of lateral line 8 1/5 to 9 1/5 in straight section to caudal base; no right lateral line.

D. 100 to 104, fin height 1/2 to 1 4/5 in total head length; A. 83 to 85, fin height 1 2/5 to 1 1/2; caudal 1 in head to 4 2/3 in rest of body; least depth of caudal peduncle 2 4/5 to 3 3/5 in total head length;

young third half of fin pale.

Zanzibar, Seychelles, East Indies.
Coloration constant and with little variation even due to age. One example (1182) differs in that a narrow brown line extends from snout tip to dorsal and along back medianly.

left pectoral 1 2/5 to 1 4/5, right pectoral 1 3/5 to 1 7/8; left ventral 1 3/5 to 1 2/3, right ventral 2 to 2 2/3, followed by spine.

Left side very pale brown, semipellucid areas of interradials broadly paler or slightly diffused buff. Whole left side with more or less soiled diffuse dark clouding. Orbits dark neutral gray. Vertical fins all brownish, darker or more dusky terminally. Left pectoral very pale. Left ventral usually dusky, sometimes dusky black. Right side whitish, also right paired fins, though vertical fins

depth 1 1/2 to 1 3/5; head 3 to 3 1/5, width 1 4/5 to 2. Snout 3 1/5 to 3 3/5 in head; eye 2 2/3 to 3 2/5, greater than snout in young to 1 1/2 with age, little greater than interorbital in young to 1 1/4 in interorbital with age; maxillary 3/5 to 4/5 in snout, 3 1/4 to 4 in head; interorbital 2 2/3 to 2 3/4, broadly convex. Gill rakers 5+10, short-pointed, 1/8 of gill filaments, which equal eye.

Scales 42 to 44 between gill-opening and caudal base; lateral line 35 to 37; 12 scales above lateral line, 19 or 20 below. Scales with 1 to 9 basal radiating striae, largely absent with age; apical denticles 5-6 to 105, with 7 to 9 series of transverse basal elements.

D. XIV, 17, I, or 18, I, last spine 1 1/4 to 1 3/5 in head, seventh ray 1 1/5 to 1 2/5; A. III, 16, I, third spine 1 2/3 to 1 4/5, seventh ray 1 1/2 to 1 2/3; least depth of caudal peduncle 2 1/2 to 3; caudal 1 2/5 to 1 3/5, hind edge slightly convex; pectoral 1 1/10 to 1 1/4; ventral 1 1/8 to 1 1/4.

Light brown generally. Black band from supraoccipital region to eye, which it crosses, down over cheek and front of chest where also meeting its fellow diffusely. Large blackish blotch on side of body equal to anal fin length in extent; long as head in young. Caudal with broad pale posterior edge, in

all brownish, especially terminally.

R. S. N. M., No. , type

Chaetodon zanzibarensis Playfair, Fishes of Zanzibar, 1865, p. 33, plate 6, fig. 1, Zanzibar. — Pfeffer, Jahrb. Hamburg. Wiss. Anstalt., band 6, 1889, p. 22 (Zanzibar).

Chaetodon unifasciatus (non Gronow) (Van Hasselt) Bleeker, Verh. K. Akad. Wet. Amsterdam (Rec. Chaetodon.), deel 17, 1877, p. 63 (name in synonymy).

3968. D.5412. Lauis Point Light, N. 21° E., 5.5 miles (lat. 10° 09' 15" N., long. 123° 52' E.), between Cebu and Bohol. In 162 fathoms. March 23, 1909. Length 155 mm. Type.

2200

Laeops cyphe new species

Depth 2 3/4 to 2 4/5; head 4 1/3 to 4 1/2, width 3 4/5 to 4. Snout to lower orbit 4 1/8 to 4 4/5 in head from snout tip, deep notch in upper profile before upper orbit; lower orbit 4 1/8 to 4 3/5, subequal with snout, 1/5 in advance of upper orbit which close to though not touching upper profile; maxillary reaches 1/5 to 1/4 in lower orbit, expansion 3 in lower orbit, length 2 1/4 to 2 4/5 in head from snout tip; teeth even, uniserial, larger anteriorly in jaws; interorbital narrow bony bed, width 4 1/2 in lower orbit. Gill rakers 6 + 7, short, lanceolate, 1/2 gill filaments, which 1/2 lower orbit.

Scales 97 to 100 in lateral line to caudal base and 7 or 8 more on latter; 24 above, 33 below. Muzzle naked. Fins naked, except caudal scaly basally. Scales with 25 to 28 basal radiating striae; circuli fine, complete. Arch of lateral line 6 2/5 to 7 2/5 in straight section to caudal

base; no right lateral line. Scales cycloid on both sides of body.

D. 105 or 106, fin height 1 3/5 to 1 4/5 in total head length; A. 82 to 84, fin height 1 3/5 to 1 7/8; caudal 1 1/8 to 1 2/5, ends in median point behind; left pectoral 2 to 2 1/8, right pectoral 2 1/5 to 2 4/5; right ventral 1 3/5 to 2 1/3, left ventral 1 4/5 to 2 3/4, followed by spine.

Left side brown, with cloudings of darker. Orbits neutral slate. Fins pale brown, little darker terminally, especially caudal. Right side whitish, vertical fins all more or less grayish terminally.

Diagnosis. Suggestive of Laeops macrophthalmus (Alcock), differing in the notch in the upper profile of the head before the upper orbit, more numerous dorsal and anal rays and greatly shorter left pectoral fin. My specimens show much more transparent along dorsal and anal margins of body, region of the basal elements to the fin rays.

2063. D. 5519. Point Tagolo Light, S. 71° W., 8.7 miles (lat. 8°47' N., long. 123°31'15" E.), northern Mindanao. In 182 fathoms. August 9, 1909. Length 149 mm. Type.

2087. D. 5517. Point Tagolo Light, S. 83° W., 10.5 miles (lat. 8°45' 30" N., long. 123°33'45" E., northern Mindanao. In 169 fathoms. August 9, 1909. Length 139 mm. Paratype.

U. S. N. M., No. , type.

Lacops gracilis new species

Depth 3 1/4 to 3 1/2; head 4 3/4, width 3 1/5 to 4 1/8. Snout to lower orbit 5 to 5 1/2 in head from snout tip; lower orbit 3 1/4 to 3 1/3, 1/4 to 1/2 in advance of upper orbit, which close to upper profile; maxillary vertical, reaches front of lower orbit, expansion 3 in lower orbit, length 3 1/2 to 4 1/8 in head from snout tip; interorbital very narrow transverse bony ridge separating orbits. Gill rakers 5+9, short, lanceolate, 1/3 of gill filaments, which 1/2 of lower orbit.

Scales 110 in lateral line to caudal base and 8 more on latter; 22 above, 26 below. Scales deciduous, largely fallen. Fins largely naked, caudal base finely scaled. Scales with 25 to 31 basal radiating striae; circuli fine, complete. Scales cycloid on both sides of body. Lateral line with short high arch anteriorly, 6 2/3 in straight section to caudal

base; no right lateral line.

D. 111, fin height 2 to 2 1/10 in total head length; D. 90, fin height 2 to 2 1/8; caudal 1 1/10 to 1 1/4, ending in median point behind; least depth of caudal peduncle 3 1/2 to 4; left pectoral 1 3/5 to 1 2/3, right pectoral 2 1/3 to 2 2/5; left ventral 2 1/8 to 3 1/10, right ventral 3 to 3 1/2, followed by spine.

Left side light or pale russet, soiled with dusky as some irregular cloudings near or along dorsal and anal profiles of body. Fins pale or grayish. Caudal blackish medially and terminally. Orbits neutral gray. Right side whitish. Dorsal and anal only slightly grayish terminally, though caudal blackish medially and terminally as on left side.

Diagnosis. Greatly like Laeops guntheri Alcock, though with lower orbit far more in advance of upper, which not reaching upper

profile (shown touching upper profile in Alcock's figure), more fin rays and scales!

U. S. N. M., No. , type.

2195. D. 5393. Panganalan Point, Talajit Island, S. 59° E., 14.8 miles (lat. 12°03'30" N., long. 124°03'36" E.), between Samar and Masbate. Dn 136 fathoms. March 13, 1909. Length 120 mm. Paratype.

1805. D. 5212. Panalangan Point, S. 54°30' E., 14.50 miles (lat. 12°04' 15" N., long. 124°04'36" E.), east of Masbate. Dn 108 fathoms. April 20, 1908. Length 165 mm. Type.

Laeops guentheri Alcock

Laeops guentheri Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 438, 1890 (type locality: Gulf of Martaban, Burma; off Ganjam, Vizagapatam; 15 to 30 fathoms); Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 328, 1896 ( ); Illustrat. Zool. Investigator, pt. , pl. 22, fig. 4, 1898. — Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 37, April 1927 (north end Persian Gulf, Vizagapatam, Ganjam, Orissa, Puri, Gulf of Martaban).

Sciaenectes macrophthalmus (not Alcock) Jenkins, Mem. Indian Mus., vol. 3, p. 27, 1910 (part).

depth 2 3/5 to 2 3/4; head 5 to 5 1/5, width 3 2/5 to 3 1/2. Snout tip to lower orbit 6 1/5 to 6 1/2 in head from snout tip; lower orbit 3 1/5 to 3 2/3, greatly exceeds snout, 1/5 to 1/4 in advance of upper orbit; maxillary reaches 1/5 to 1/4 in lower orbit, length 4 1/8 to 4 1/2 in head from snout tip; interorbital with very narrow groove, width 5 in lower orbit. Gill rakers 2 + 6, lanceolate, 1/4 of gill filaments which 1 3/4 in lower orbit.

Scales 83 to 87 in lateral line to caudal base and 5 or 6 more on latter; 19 or 20 above, 18 or 19 below. Snout and muzzle naked. Vertical fins covered more or less over basal portions with minute scales. Scales with 10 or 11 complete circuli, all cycloid. Lateral line on left side only, arch 8 to 8 1/5 in straight section to caudal base.

D. 10 to 102, fin height 1 1/3 to 1 2/5 in total head length; A. 80 to 83, fin height 1 1/4 to 1 2/5; caudal 1 1/8, ends

Cyprelurus pinnatibarbatus (Bennett)

Exocoetus pinnatibarbatus Bennett, Proc. Comm. Zool. Soc., London, vol. 1, 1830, p. 146 (type locality: Ach.-2-9.).
— (Günther, Cat. Fishes Brit. Mus., vol. 6, p. 284, 1866 (no data).

in median point behind; least depth of caudal peduncle 2 3/4 to 3; pectoral 1 3/4 to 1 4/5; ventral 1 1/3 to 1 2/5.

Left side buff, becoming nearly cream buff marginally or about interradial regions. Orbits grayish. Vertical fins all more or less brownish Right side whitish, vertical fins darker.

Persian Gulf, east coast of India, Burma.

Hyporhamphus intermedius Waite, Rec. Australian Mus., vol. 5, pt. 3, p. 194, March 11, 1904 (Lord Howe Island); Rec. Canterbury Mus., vol. 1, no. 1, p. 15, April 25, 1907 (reference); Records South Australian Mus., vol. 2, no. 1, p. 65, fig. 98, April 23, 1921. — Mc Culloch, Austral. Mus. Mem., vol. 5, p. 102, June 29, 1929 (compiled).

Depth 9 3/4, middle of back flattened, slightly convex; head 3, head from snout tip 5, width 2 1/2. Snout 2 4/5 in head from snout tip; eye 4 1/4, 1 3/4 in snout, 1 1/10 in interorbital; maxillary reaches 4/5 to eye, length 2 7/8 in head from snout tip; interorbital 3 7/8.

Scales 52 to 56 in axial lateral series from gill opening to caudal.

D. 5442. San Fernando Point Light, N. 39° E., 8.4 miles (lat. 16° 30' 36" N., long. 120° 11' 06" E.), west coast of Luzon. In 45 fathoms. May 11, 1909. Length 68 to 77 mm. 4 examples.

purplish, also lower, and somewhat reticulated purplish slaty stripes on chin and front of breast, these about twice breadth of stripes on sides. Black blotch, nearly equal to eye, above upper angle of gill opening.

9400. Kuiol Island. September 8, 1909. Length 370 mm. Small orange spots on cheek and opercle. Small black blotch postocular, less than eye. Dorsal yellow, with narrow bars on front and terminal spinous part and terminal rayed part, margin and base purple. Anal similar, but bars more continuous along margin. Caudal spotted with brown, base white.

Laeops kitaharae Smith and Pope

Laeops kitaharae Smith and Pope, Proc. U. S. Nat. Mus., vol. 31, p. 496, fig. 12, 1906 (type locality: Kagoshima). — Jordan, Tanaka, Snyder, Journ. College Sci., vol. 33, p. 317, fig. 265 (copied), 1913 (compiled). — Tanaka, Journ. Fac. Sci. Imp. Tokyo, sect. 4, Zool., vol. 3, pt. 1, p. 38, Nov. 4, 1931 (reference).

Laeops lanceolata Franz

Laeops lanceolata Franz, Abhandl. Kon. Bayer. Akad. Wiss., Vol. 4, Suppl. Band 1, p. 62, pl. 8, fig. 60, 1910 (type locality: Fukuura, Idzushi). Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 314, 1913 (reference).

? Laeoptichthys fragilis Hubbs, Proc. U. S. Nat. Mus., vol. 48, p. 460, pl. 26, fig. 4, 1915 (type locality: Suruga Gulf, 47 fathoms).

Laeops lophoptera (Alcock)

Sciaenectes lophoptera Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, no. 3, p. 284, pl. 16, fig. 2, 1889 (type locality: 16 miles east of the mouth of the Devi River, 68 fathoms). — Goode and Bean, Oceanic Ichth., p. 440, 1895 (name). — Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 329, 1896.

Laeops lophoptera Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 39, April 1927 (types).

Laeops macrophthalmus (Alcock)

Scianectes macrophthalmus Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, no. 3, p. 292, pl. 16, fig. 4, 1889 (type locality: 40 miles south west of Aboyab, 100 fathoms); Ann. Mag. Nat. Hist., ser. 6, vol. [illegible], p. 398, 1889 ( ); ser. 6, vol. 6, p. 216, Sep. 1890 (Bengal Bay, 98 to 102 fathoms). — Goode and Bean, Oceanic Ichth., p. 440, 1895 (name). — Alcock, Journ. Asiatic Soc. Bengal, vol. 65, pt. 2, p. 329, 1896 ( ); — Illustrat. Zool. Investigator, pt. 5, pl. 23, fig. 1, 1898.

Laeops macrophthalmus Alcock, Cat. Deep Sea Fishes Ind. Mus., p. 128, 1899 (Bengal Bay; Arabian Sea; 98 to 107 fathoms). — Regan, Journ. Bombay Nat. Hist. Soc., vol. 16, p. 329, 1905 (Gulf of Oman).

— Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 38, April 1927 (lat. 7° N., long. 76° E.; off Calicut; Bengal Bay; types; 98 to 107 fathoms).

Laeops nigrescens Lloyd

Laeops nigrescens Lloyd, Rec. Indian Mus., vol. 1, p. 9, 1907 (type locality:

Drew. Indian Mus., ~~vol. 2, pl. 43, fig. 2, 1908~~, vol. 2, p. 161, 1909 (Gulf of Aden, 130 fathoms).

— Norman, Rec. Indian Mus., vol. 29, pt. 1, p. 38, fig. 10, April 1927 (types; Gulf of Aden, 130 fathoms).

Illustr. Zool. Investigator, pt. 9, pl. 43, fig. 2, 1908;

Laeops parviceps Günther

Laeops parviceps Günther, Rep. Voy. Challenger, vol. 1, pt. 6, p. 29, pl. 15, fig. A, 1880 (type locality: off Twofold Bay, New South Wales). — McCulloch, Austral. Mus. Mem., vol. 5, pt. 2, p. 278, Sep. 10, 1929 (reference). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 116, fig. 28, 1929 (Arafura Sea).

Depth 2 3/4 to 2 4/5; head 5 3/5 to 5 2/3, width 3 2/5 to 4. Snout tip to lower orbit 6 to 6 1/2 in head from snout tip; lower orbit 4 to 4 4/5, greater than snout, 1 1/4 in advance of larger upper orbit; maxillary nearly vertical reaches to or 1/8 in lower orbit, narrow or expansion less than 1/2 of pupil, length 4 to 4 2/5 in head from snout tip; interorbital ridge narrow ridge 2 to 3 in lower orbit. Gill rakers 4 + 7 short points, 1/3 of gill filaments, which 1 1/2 in lower

orbit.

Scales 92 to 95 in lateral line to caudal base and 5 or 6 more on latter; 22 above 23 below. Muzzle naked. Minute scales on vertical fins basally. Scales thin, feeble, very deciduous. Scales with 13 to 15 short marginal parallel basal striae; 8 to 10 complete circuli. Lateral line arch 7 3/5 to 8 3/4 in straight section, not distinct on right or blind side.

D. 101 to 105, fin height 1 1/8 to 1 1/5 in total head length; A. 83 or 84, fin height 1 2/5 to 1 3/5; caudal 1 1/8, ends in median pointed angle behind; least depth of caudal peduncle 2 1/2 to 2 3/4; pectoral 3 3/4 to 4; ventral 1 1/5 to 1 1/4.

18862, 18863. Tilig, Lubang. July 15, 1908. Length 66 to 86 mm.

511. Ulugan Bay, near Rita Island. December 29, 1908. Length 80 mm.

43934 U.S.N.M. Mauritius. Colonel Nicholas Pike. Length 109 mm.

52514 U.S.N.M. Apia, Samoa. Bureau of Fisheries. Length 71 to 80 mm. 2 examples.

Left side largely ochraceous buff, becoming paler or more buff about interradial regions of body. Body also with irregular or soiled like brownish clouding. Orbits neutral gray. Fins pale or whitish, verticals becoming dusky or blackish brown terminally. Blind or right side buff to whitish, vertical fins all brownish terminally, though paler than on left side.

Arafura Sea, New South Wales. Any examples with smaller orbits than shown in Beaufort's figure.

4053. D. 5453. Legaspi Light, S. 58° W., 4.5 miles (lat. 13°12' N., long. 123° 49'18" E.), east coast of Luzon. In 146 fathoms. June 7, 1909. Length 87 mm.

79260 U.S.N.M. Philippines.
E. H. Taylor. (B. 205.) Length 80 to 95 mm. 2 examples.

The following Tholichthys forms apparently belong with these species:
5 examples. Baradero Harbor, Mindoro. July 22, 1908. Length 19 to 21 mm.
D. XIII, 23; A. III, 20 or 21.

83254, 83331, 83345 U.S.N.M. No locality. Samoa or Hawaii
Likely Albatross? Wilkes Exploring Expedition.
Length 55 to 180 mm.

D. 5442. San Fernando Point Light, N. 39° E., 8.4 miles (lat. 16°30'36" N., long. 120°11'06" E.), west coast of Luzon. In 45 fathoms. May 10, 1909. Length 76 mm.

Hemitaurichthys zoster (Bennett).

Chaetodon zoster Bennett, Proc. Comm. Zool. Soc. London, vol. 1, 1831, p. 61. Mauritius. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 33 (copied). — Peters, Monatsb. Akad. Wiss. Berlin, 1876, p. 437 (Mauritius). — Abh. Arch. Naturges., band 89, abth. A, heft 5, 1923, p. 38, plate 2, fig. 7 (Neu-Guinea, Mauritius).

Chaetodon polylepis Bleeker, Act. Soc. Sci. Ind. Neerl., vol. 2, no. 2, 1857, p. (4) 54. Amboina. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 35 (no locality). — Elera, Cat. Faun. Filip., vol. 1, 1895, p. 488 (Luzon, Manila).

Hemitaurichthys polylepis Bleeker, Atlas Ichth. Ind. Neerl., vol. 9, 1877, p. 31, plate (14) 378, fig. 4 (Amboina and Timor). — Fowler, Occas. Pap. Bishop Mus., vol. 8, no. 7, 1923, p. 384 (Honolulu).

Laeops variegata Franz

Laeops variegata Franz, Abhandl. Kon. Bayer. Akad. Wiss., vol. 4, Suppl. Band I, p. 63, pl. 8, fig. 59, 1910 (type locality: Fukuura). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 314, 1913 (reference).

Genus Lepidoblepharon Weber

Lepidoblepharon Weber, Siboga Fishes, vol. 57, p. 421, 1913. (Type Lepidoblepharon ophthalmolepis Weber, monotypic.)

Eyes on right side, separated by narrow scaly space. Mouth wide. Teeth small, in bands in jaws. Head of vomer projecting into mouth, toothless or with few teeth on its hind border, rest of palate toothless. Gill membranes united below throat. Gill rakers long. Scales firm, ctenoid on colored side where also covering snout, jaws and upper surfaces of eyes; cycloid on blind side. Lateral line arched over pectoral. Dorsal and anal rays simple or split at ends and last anal more distinctly forked. Dorsal begins near snout tip, without enlarged rays. Both pectorals developed. Right ventral well before left.

Lepidoblepharon ophthalmolepis Weber

Lepidoblepharon ophthalmolepis Weber, Siboga Exped., vol. 57, p. 422, pl. 6, fig. 7, 1913 (type locality: lat. 5°40'S., long. 132°26'E., 310 fathoms; Arafura Sea near Kei Islands). — Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 143, fig. 36, 1929 (type).

Depth 2 1/4? to 2 1/2; head 2 3/4 to 2 7/8, width 5. Snout tip to lower orbit 4 2/5 in head from snout tip; lower orbit 2 3/5 to 3 1/5 in head from snout tip, greater than snout, opposite upper orbit; maxillary extends 2/5 in lower orbit, expansion 4 3/4 in lower orbit, length 1 7/8 in head from snout tip; interorbital narrow bony keel. Gill rakers 5+10, lanceolate, 1 2/3 in lower orbit, twice length of gill filaments.

Scales 48 or 49 in lateral line to caudal base and 4 or 5 more on

latter; 16 above, 17 below, caudal base scaly, other fins scaleless. with 8 to 16 basal radiating striae; 17 to 22 short apical denticles, with 1 or 2 transverse series of basal elements; circuli fine. Lateral line on both sides, anterior arch 2 2/5 to 3 1/8 in straight section to caudal base.

D. 63 or 64, fin height 2 1/2 in top head; A. 45, fin height 3; caudal 1 1/3, convex behind; least depth of caudal peduncle 2 7/8; pectoral 2 7/8; ventral 3 1/5.

~~Left~~ Right side uniformly brownish, orbits slate gray. Peritoneum showing through body walls neutral gray. Left side whitish, vertical fins more or less grayish.

East Indies; Philippines. Heretofore only known from the type, a specimen 122 mm long.

1 example. D. 5260. Balanja Point, N. 28° W., 7.20 miles (lat. 12° 25' 35" N., long. 121° 31' 35" E.), off southeastern Mindoro. In 234 fathoms. June 3, 1908. Length 118 mm.

4134. D. 5585. Sipadan Island (M.). S. 89° W., 12 miles (lat. 4° 7' N., long. 118° 49' 54" E.), Sibuko Bay, Borneo. In 476 fathoms. September 28, 1909. Length 118 mm. Front of head damaged.